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CONTENTS.

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS on Professional Secrecy. By the Rt. Hon. Lord DAWSON OF PENN, G.C.V.O., C.B., M.D., F.R.C.P. 619

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The Danger of "Steel Scrubbers": Four Cases of Extraction of Wire from Larynx and Pharynx. By ANDREW WYLIE, M.D. 626

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A Case of Bilateral Retro-Ocular Neuritis. By H. W. ARCHER-HALL, D.O. Oxf.—(*Illustrated*) . 633

Successful Prostatectomy at Ninety Years. By JAMES B. MACALPINE, F.R.C.S.. 634

Venereal Experiences in France of the New Zealand Force. By ETTIE A. ROUT 634

The Routine Work of a Tuberculosis Dispensary. By W. H. DICKINSON, M.B., D.P.H., M.R.C.P. 671

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Multiple Congenital Defect. By KENNETH M. PURVES, M.B., Ch.B. 634

Hæmangioma of Larynx. By J. B. CAVENAGH, M.B., Ch.B. 635

MEDICAL SOCIETIES.

Royal Society of Medicine: Section of Surgery: Sub-Section of Proctology: The After-Results of Colectomy 635

Section of Otology: Functional Deafness.... 639

Society of Medical Officers of Health: Small-pox and Vaccination..... 639

Medico-Legal Society: Professional Secrecy.... 641

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La Démence chez les Epileptiques. By Dr. M. Brissot and Dr. H. Bourilhet.... 645

Die klinische Ultramikroskopie und die Frühdiagnose der Syphilis. By Gustav Fantl..... 646

American Journal of Ophthalmology 646

NEW INVENTIONS.

Radium Applicator Forceps (C. P. G. Wakeley, F.R.C.S.)—(*Illustrated*) .. 646

LEADING ARTICLES.

PROFESSIONAL SECRECY... 647

DENTAL SEPSIS AND GENERAL DISEASE..... 648

HEALTH IN THE AIR FORCE 648

A COMBINED APPEAL FOR THE HOSPITALS OF LONDON..... 649

ANNOTATIONS.

A Year's Atmospheric Pollution 649

The Source of "Tonsils and Adenoids" 650

Physiology of the Gall-Bladder 650

Mycology and Medicine.... 651

Albuminuria in Pregnancy. 651

Efficiency in Silk Weaving 652

Anæsthesia for Intracranial Surgery 652

The Need for Anatomical Research 652

Subcutaneous Fibroid Syphilomas..... 653

Autogenous Blood Reinfusion in Ruptured Ectopic Gestation 653

Meat Inspection 653

Hospital Administration and the Voluntary Principle..... 654

SPECIAL ARTICLES.

Health Report of the Royal Air Force for 1920: II.—Disease and Injury in Different Types of Units and Trades in the Royal Air Force during 1920 .. 655

The Medical Uses of Radium: Report by the Medical Research Council 657

A Dysentery Epidemic: Question of Water-Supply 658

Paris: Quick Diagnosis in Tuberculosis 659

Vienna: Medical Permission for Marriages 660

Czecho-Slovakia: Sanitary Conditions in Greater Prague 660

CORRESPONDENCE.

A National Council for Mental Hygiene (Sir Courtauld Thomson).... 661

The Medico-Legal Society (Lord Justice Atkin and others)..... 662

Combined Methods in the Treatment of Cancer (Dr. J. Norman Glaister) 662

The Treatment of Adenoids (Sir W. Milligan and others)..... 662

A Tonsil and Adenoid Inquiry (Dr. Sidney Barwise) 663

Adenoids and the Common Cold (Dr. Harry Merrall) 663

The Anaphylactic Theory of Gout (Dr. G. A. Wyon) 664

The Pernicious Vomiting of Pregnancy (Prof. Winifred C. Cullis and Dr. Evelyn E. Hewer) 664

Blood Transfusion: Incompatibility or Anaphylaxis? (Mr. Geoffrey Keynes) 664

Blood Transfusion: A Simple Method of Group Determination (Dr. Tom Houston) 665

German X Ray Apparatus. 674

MEDICAL NEWS.

University of Cambridge: Pass-list 665

University of Durham: Faculty of Medicine: Pass-list 665

Royal College of Surgeons of Edinburgh: Pass-list 665

Birmingham Eye Hospital. 635

Literary Intelligence..... 649

Manchester and Venereal Diseases 658

Alastrim in Saddleworth .. 659

Princess Alice Memorial Hospital, Eastbourne .. 661

Horsham Hospital 665

University of Edinburgh .. 665

University of London 665

Small-pox at Oldham..... 666

Farewell Dinner to Dr. J. Niven 666

Food Education Society .. 666

Royal Portsmouth Hospital 666

Nursing Service of Mental Hospitals 666

Committees on Dietaries and Clinical Records in Mental Hospitals 666

Society of Radiographers.. 666

Optical Society 666

Rontgen Society 666

Presentation to a Medical Man 666

A New Surgical Club in Dublin..... 666

Scholarships and Grants for Scientific Research 666

The late Dr. W. A. Hollis.. 666

Royal Institution of Great Britain 667

General Hospital, Birmingham 667

The Extent of the House Famine 670

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Royal Air Force. 667

PARLIAMENTARY INTELLIGENCE.

House of Commons: Nursing Council Rules.—Pure Milk-Supply.—Deaths due to Starvation and Privation.—New Tuberculosis Vaccine for Bovine Animals.—Chronic Cases of Tuberculosis.—Safeguarding of Industries Act.—Medical Economies in the Territorial Army.—Cancer Statistics.—Welsh Regional Survey 667

NOTES, SHORT COMMENTS, &c.

The National Institute of Industrial Psychology: A Year's Work 673

Dental Extraction during Pregnancy 673

Physiology of Helio-Alpine Treatment 673

Exeunt Inspectors of Nuisances 674

Hospital Care of Suicidal Cases 674

Habit and Adaptation 674

Appointments.—Vacancies 669

Births, Marriages, Deaths . 670

Medical Diary 670

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An Address
ON
PROFESSIONAL SECRECY.

Delivered at a meeting of the Medico-Legal Society held on March 21st, 1922,

BY THE RT. HON. LORD DAWSON OF PENN,
G.C.V.O., C.B., M.D. LOND., F.R.C.P.,
PHYSICIAN TO THE LONDON HOSPITAL.

IT is fitting that a subject in which the public has a primary and fundamental concern should be discussed in friendly conclave by the two professions best qualified to know its importance and its difficulties. May I, before proceeding further, state, in the interests of clarity, that the general principle of professional secrecy is not in dispute? Even the lawyer, most jealous of his unrestricted right to draw from a medical witness any or every secret which might directly or indirectly benefit his client, would not wish that, outside a court of justice, the intimacies of life, including of necessity intimacies of his own life, should not be completely protected from discussion and gossip.

THE PATIENT'S PRIVILEGE AND PROFESSIONAL HONOUR.

The question at issue, as I see it, is whether a medical witness should have the right to claim a measure of privilege in a court of justice not accorded to an ordinary witness. My theme will be that the position of the doctor is so special and the circumstances under which he gains his knowledge are so unique, that protection should, in the interests of the public, be accorded to his evidence. And let me say at once, and with emphasis, that this claim for privilege is not based on professional interests. As a matter of fact the material interests of the doctor are not involved. On the other hand, professional honour is notably and deeply concerned. The privilege we claim is not the privilege of the doctor; it is the privilege of the patient, just as the existing privilege of the lawyer is, in reality, the privilege of the client. Until recently the public has been under the firm conviction that what was told a doctor was sacred and this obligation of secrecy would be respected by the law courts. And, accordingly, the public has been in no small way perturbed and shocked by judges' rulings in recent cases, to the effect that doctors were privileged in no respect whatever. I will refer briefly to two recent cases which have produced stir, and, I venture to think, concern.

The Case of Needham v. Needham.

The first was Needham *v.* Needham. An erring wife attended a venereal clinic at Chester with her infant, which was suffering from gonorrhœal ophthalmia. Subsequently the husband brought an action for divorce against his wife, and the husband subpœnaed the medical officer of the clinic. The doctor appealed to the judge and asked to be exempted from giving testimony, on the ground that all he knew he had learned in his professional relationships with his patient. The judge replied that the law gave him no special exemption, and did it with an abruptness and brusquerie which give the impression that the judge had for the moment forgotten the existence of other learned professions besides his own. The doctor then produced the Regulations of the Local Government Board, which laid down that "all information obtained in regard to any person treated at an approved clinic shall be regarded as confidential." These Regulations were issued by the Local Government Board in virtue of the various powers conferred upon them by a series of enactments, with which I shall not trouble you. The learned judge declared that these Regulations had no binding force in a court of justice and pressed the doctor to give evidence, and the doctor did so, under protest.

Now, this ruling injures the fabric of these venereal clinics. It is obvious that unless those who should attend have confidence that they can do so secretly, but few will attend at all, and the purpose of the clinics will be, in a measure, defeated. So impressed were the health authorities in setting up these clinics, with the necessity of secrecy, that the patients are identified in the clinical records by numbers, and at many hospitals great pains are taken to prevent them being marked people. You can well imagine, therefore, that the learned judge's ruling has produced a feeling of insecurity and distrust. Although venereal disease is a most important subject, I would deprecate basing on it alone the question of medical secrecy. Medical secrecy and the protection of medical evidence have larger sanctions for their claims.

An Illegitimate Still-Birth Notification.

The second case that produced comment occurred, curiously enough, within a short period of the first; it was no doubt the cumulative effect of these two rulings which so disturbed the public mind. A still-birth had been notified to the medical officer of health of Ilford, and the notification showed that the father and the mother of the infant did not possess the same name. The medical officer at Ilford was subsequently asked, by a solicitor, for information as to this still-birth, which he refused to supply, on the ground that it had been agreed by the Local Government Board that information of this description should not be given away. The solicitor then appealed to the Ilford council; the council stood by the refusal of their medical officer. The medical officer was then subpœnaed at the Divorce Court and claimed privilege. Lord Mersey, the presiding judge, refused it, and ruled that the notification card in the possession of the Ilford Council should be produced. It is easy to see that no parents, under similar circumstances, will truthfully report such a birth in the future.

THE STATUTORY OBLIGATIONS OF MEDICAL PRACTICE.

Although these rulings have disturbed the public mind, and have, I think, run contrary to public opinion and public conscience, there is no doubt that they are in accordance with the law, and although confessing to a sense of hesitancy in the presence of my legal colleagues, I will briefly refer to what the law is. According to the Common Law of England, a doctor is bound, in the witness-box, to disclose communications, however confidential, made to him by a patient. This state of the law has obtained since the case of the Duchess of Kingston, who was tried for bigamy in 1776, before Lord Mansfield. Lord Mansfield's ruling, that communications by patients to doctors were in no way privileged, has been accepted in numerous cases up to the present day. The doctrine then set forth by Mansfield was later enunciated by Jessel in the following terms: "The communications made to a medical man whose advice is sought by a patient with respect to the probable origin of the disease as to which he is consulted and which must necessarily be made in order to enable the medical man to advise and prescribe for the patient, are not protected."

Legal Authorities Who Favour Medical Privilege.

Legal authorities have, from time to time, expressed the opinion that such rulings as this are too uncompromising. Thus, Mr. Justice Buller, in Wilson *v.* Rastall, in the year 1792, much regretted that "privilege was not extended to cases in which medical persons acquired information by attending in their professional capacities." And again, Lord Brougham, in 1833, said the rule of privilege was limited to legal advisers, but "certainly it may not be very easy to discover why a like privilege has been refused to others, especially to medical advisers." Again, Best, in his well-known legal work on Evidence, says that "Communications to a medical man, even in the strictest professional confidence, have been held not protected from disclosure—a rule harsh in itself, of

questionable policy, and at variance with the practice in France and in some American States." In still more recent times, Lord Russell of Killowen expressed himself even more strongly in the following terms: "He could conceive of conditions, as in a criminal trial, where the doctor would be bound to divulge certain things, but in private litigation he could not conceive any excuse whatever for divulging what a doctor found in those intimate and sacred relations which exist between a doctor and his patient in the secrecy of the sick-room."

It is also quite true that in practice the courts have, from time to time, dealt tenderly with medical witnesses and respected their position. But these recent rulings have, by their emphatic and uncompromising re-statement, left the medical witness, in fact as well as in law, entirely without protection—as I venture to maintain, to the great detriment of the public. Yet there cannot be objection to privilege *qua* privilege, for it is already granted in fullest measure by law to the lawyer, and, in practice, to the priest, and is either permitted or ordained in certain British Dominions and many foreign countries. It falls to me to show that the circumstances and conditions of the medical witness are, like those of the lawyer and the priest, such as to justify the granting of privilege in the public interest; for only in the public interest have any of us a right to claim it.

THE PRACTICE IN FOREIGN COUNTRIES RESPECTING PROFESSIONAL SECRECY.

Before trying to establish that, I think it will be convenient if I briefly set forth the law and practice of various countries in this matter. I have taken pains to be substantially accurate, but my remarks may need a certain amount of amplification, and possibly some correction in details.

In the majority of the United States, including the State of New York, the law grants privilege, though in varying degrees, between doctors and patients. In such States, a doctor cannot be required, though he is not unconditionally forbidden, to divulge information without the consent of his patient. In some States this privilege is limited to civil actions alone. Turning now to France, Article 378 of the French Penal Code—I will not quote at length—says the position of physicians, surgeons, and others who are the depositories of secrets confided to them is, that they are forbidden to divulge those secrets, save in certain specified cases which the law lays down. And those specified cases are such things as the notification of infectious diseases and other matters concerning the public health; thus it may be said that, in substance and in fact, the privilege of medical witnesses in France is complete and absolute.

Italy affords an example of considerable interest, for two reasons. First, the Italian law in question is recent; it goes no further back than the year 1914, it bears evidence that the subject has been closely considered. It is governed by Article 248 of the Code of Criminal Procedure, and runs thus: "The following persons cannot be compelled to depose as to what has been confided to them or has come to their knowledge by reason of their status and office or of their profession: (1) The minister of any worship admitted in the State; (2) notaries, advocates, and solicitors; and (3) medical men and surgeons, chemists, midwives, and sanitary officers, *saving* the cases in which the law expressly obliges them to inform the public authority." The proviso is of considerable interest; it refers to Article 439 of the Criminal Code, which is as follows: "The medical man, the surgeon, the midwife or other sanitary officer who, having lent the assistance of his profession in cases which may present the character of crime against the person, omits or delays to report thereon to the judicial authority or to the authority of public safety, is punished with a fine of 50 lire, unless such report would expose the person so assisted to criminal proceedings." The surprising part there is the smallness of the fine.

In British Dominions.

I now pass to consider certain portions of the British Empire. With regard to Australia, I have been unable to obtain any information; but it is obvious that in New Zealand the Legislature has given a considerable amount of attention to the subject. In the Evidence Act of 1908 (New Zealand) the following enactment occurs: "(*a*) A physician or surgeon shall not, without the consent of his patient, divulge in any civil proceeding, unless the sanity of the patient is the matter in dispute, any communication made to him in his professional character by such patient and necessary to enable him to prescribe or act for such a patient; (*b*) nothing in this section shall protect any communication made for any criminal purpose or prejudice the right to give in evidence any statement or representation at any time to or by a physician or surgeon in or about the effecting by any person of an insurance on the life of himself or any other person."

The latter point, which seems rather trifling at first, is worthy of attention; it is, no doubt, partly aimed at the fact that insurances are effected on people's lives before attempts to remove them from this world take place. It is also interesting in the light of experience in the United States, where a considerable number of disputed cases have occurred in which medical evidence is required over alleged false returns in insurance certificates. However, I venture to think that the law of New Zealand is of considerable application to our present theme.

In India, on the other hand, although the Indian Code gives protection to barristers and solicitors, no such protection of any kind is given to the medical profession. And the same rule obtains in the Union of South Africa. In Canada, although the Common Law is similar to that of England, I have it on the authority of a judge of the Supreme Court that in practice it is unusual for any judge to insist on a medical witness divulging matters which such witness states to involve professional secrets. So although not in law, yet in practice, medical men are better protected in Canada than are medical men in this country.

PRIVILEGES ACCORDED TO PRIESTS AND LAWYERS.

On these facts it can be justly said, to out-and-out opponents of privilege to medical men, that the existence of such privilege is not, in the experience of those countries, subversive of good government, but rather presents advantages which justify legal recognition. I wish to turn, next, to the privilege which exists for lawyers and priests[1] in this country: for the former by law, and for the latter by universal practice. The privilege of the lawyer, though limited by certain conditions, is, in practice, all but complete. For generations the law has occupied a favoured position: it is, in fact, the spoilt child of the professions. There is a danger that any proposed extension of its special privileges to other callings may be criticised as contrary to the interests of the State and likely to be followed by grave results, when in reality it is the convenience of legal procedure which is provoking the opposition. The law says it is in accordance with the spirit of English law that communications between clients and lawyers should be privileged. Agreed. But what about the spirit of English medicine? The law deals with justice: medicine deals with health and life. Can it be contended that one is more important than the other? I state with firm conviction that the usefulness of medicine to the community would be gravely prejudiced if the confidence of patients were destroyed, as it assuredly would be by the thought that their statements to their doctors were not sacred.

Turning now to the Church—what interests me is, that when my legal friends discuss the pros and cons of privilege, they do not like to ponder long about the privilege extended to priests. It is possible to justify the privilege of the lawyers on the ground that

[1] By priests I mean Roman Catholic priests.

it is necessary for the administration of law, and I am of those who favour the privilege of lawyers. But there is no justification for the State giving complete privilege to a priest while denying it to a medical man. Since the Reformation the law has not recognised privilege for priests, but such privilege is so recognised by custom that there is no instance of a judge successfully pressing a priest to divulge what he has heard in the confessional, and no judge would succeed, for the whole force of the Catholic Church would be against him. Whether the law recognises this privilege in theory is of small moment. What concerns us is that the privilege is in practice absolute, and the knowledge of it prevents priests being called as witnesses where their knowledge has origin in the confessional, and the facts which doctors learn from patients are every whit as intimate as those confided to priests.

MEDICINE.

In order to make manifest the reasons for our claims, I may perhaps be permitted to state briefly what medicine stands for, and what it requires of its disciples. Medicine, as I see it, is an art based on many sciences; the student, to be worthy of his art, needs ever to pursue knowledge and, even more, to have the spirit of knowledge. But in the application of his art to human needs, the doctor requires more than scientific knowledge; he needs, in addition, insight, understanding, sympathy, and, perhaps beyond these, the religion of helpfulness. It is true enough that there are specialties, both clinical and pathological, in which technical knowledge and skill are the sole desideratum. Such specialists are called in *ad hoc*. But, be it remembered, the vast majority of doctors are general practitioners. And doctors, in the investigation of disease, depend much, very much, on what patients tell of their symptoms and their history. Over and over again, through sensitiveness and delicacy, people will delay weeks, nay months and even years, before seeing a doctor, carrying their load of anxiety, and finding, perhaps, that when they do summon courage, or by force of circumstances are driven to consult a doctor, that their malady is of too long-standing to be efficiently cured. What will be the position of the public if they once realise that what they say is not protected at all? In the course of an illness the doctor asks about, or the patient tells him, many intimate things; indeed, a patient often tells things which are, scientifically, irrelevant. But those things, however irrelevant, are very real things to him. He thinks they have a bearing on his case, and unless and until he can unburden them upon the doctor he feels that all the facts relevant to his case are not before his medical adviser, and he has not that full confidence which he has when they have been disclosed. It follows that the doctor gains deep and intimate knowledge into the lives of his patients. Is it to be seriously contended that this knowledge is to be at the service of cross-examining counsel in courts of justice? I find it difficult to think that anybody could seriously contend that it should be. Permit me to give an example.

A woman, now in middle life, happily married, with three or four children, in a previous period of her life, when she was 18, got into trouble and had an illegitimate child. That disaster was, by good fortune, known to perhaps only two people, one of them being her medical man. Later in life some litigation arises. Is her former doctor to be liable to answer questions in a Court of Law concerning her early misfortune which he only knew of as her medical adviser? Further, a patient weakened by illness will sometimes unburden to his doctor a load of care which has been disturbing his mind and prejudicing his recovery. It may concern some phase of wrong-doing in earlier life. Such a disclosure, made when the patient was suffering from sickness and weakness, might never have been made if the patient had been in health; during the period of convalescence the patient half regrets that he made it, and asks his doctor to make sure that it will never be revealed. Is the law to have the power to take advantage of this patient's illness and to compel the doctor to a disclosure should occasion necessitate? If so, all honour is at an end.

A REASONABLE MEASURE OF PROTECTION.

Now, there can be no doubt that public opinion is emphatically in favour of some measure of privilege; public opinion does not go into the niceties, but until recent decisions the impression was abroad that such protection did exist. Within the profession the demand for a measure of protection is well-nigh unanimous; we have never, as a profession, accepted the unlimited rights of the courts to force disclosure of our patients' confidences. We never shall accept it; and we resent the arrogant way in which it is sometimes demanded of us. The claims of our patients' privilege are deep set in our history and traditions and are based on the Hippocratic oath, which goes back to at least 400 years before Christ. This oath has ever been an article of faith on which our practice is based. It is still administered by many universities year by year, including the ancient University of Montpelier, which recently celebrated its 700th anniversary. It might, perhaps, be of interest to recite its terms:—

> "Whatever in my capacity as physician, or even when not so acting, I see or hear in the lives of men which ought not to be spoken abroad, I will not divulge, deeming that on all such matters I should be silent. While I continue to keep this oath inviolate, may it be granted to me to enjoy life and the practice of the art, always respected by men; but should I break and violate this oath, may the reverse be my lot."

It is fair to add that in the Low countries, Leyden, Liege, &c., the oath was taken with the reservation of a promise to make disclosure in a court of law.

The principle of the protection of medical witnesses in the interests of their patients is one which, amongst doctors, is a religious conviction, and there are confidences which no force would ever compel us to unfold. Granting that medical privilege, even if properly limited and conditioned, might rarely result in failure to detect or punish the wrong-doer, far better, I say, in the public interest, that the ends of justice should be defeated now and then than that the care of the sick should be prejudiced always. And can it be said that any system devised will never have faults or flaws? Can it be said that our system of justice, of which we are so rightly, as a nation, proud, never results in the acquittal of the guilty, or even in the conviction of the innocent? It is no argument against any proposal to be able to show that it is open to occasional failure; you have to show that this failure is so frequent as to outweigh the advantages of enactment. Lawyers are apt to think the vindication of the law is always the supreme interest of the State; in reality, occasions occur on which other considerations properly over-ride those of the law. This view is finely expressed in the well-known pronouncement of Vice-Chancellor Knight-Bruce.

> "Truth, like other good things, may be loved unwisely, may be perused too keenly, may cost too much. And surely the meanness and the mischief of prying into a man's confidential consultations with his legal adviser, the general evil of infusing reserve and dissimulation, uneasiness and suspicion and fear into those communications which must take place and which, unless in a condition of perfect security, must take place uselessly or worse, are too great a price to pay for truth itself."

ABSOLUTE PRIVILEGE NOT REQUIRED.

Privilege between patients and doctors needs to be carefully defined in its extent. I am not here to claim the absolute privilege given to lawyers and to priests. I am opposed equally to the wholesale application as to the wholesale denial of privilege to medical men. My proposition is that a measure of privilege should be granted to doctors, in the interests of their patients, beyond what is granted to the ordinary citizen. What the measure of that privilege should be, its conditions and its limitations, could best be considered at a round-table conference between doctors and lawyers, after the principle has been conceded. I will, however, throw out suggestions as to these conditions, in order to stimulate

discussion, though carefully guarding myself against the impression that I am expressing mature or final views on this difficult aspect of the question. Medical men, as a matter of fact, make no claim that secrecy shall under no circumstances be broken. I have only to instance that, with their willing coöperation, the notification of certain infectious diseases and notifications of births are ordained by Statutes in the interests of the health of the community. The rights and interests of the individual and those of the State have to be balanced one against the other. Without doubt there should be limitations to the doctor's obligation to secrecy, just as there ought to be limitations to the right of the State to ignore that obligation. Where, for instance, a doctor, from his professional relationships, knows that a cruel wrong is going to be inflicted upon an innocent party, whether it be in ordinary civil life, or during legal proceedings. I suggest that doctor should not be compelled to observe the usual obligation of silence. It may be the doctor knows that one of his patients is about to inflict an irreparable wrong—for instance, to communicate disease to some innocent party. Or he may know that, owing to the action of one of his patients, there is a danger of an innocent party in a court of justice being convicted of a crime. My own view would be that the doctor should first urge his patient to put himself right, and save the innocent party, and failing this, the doctor should be free to speak.

VINDICATION OF THE LAW AND OF THE INDIVIDUAL.

This brings me to a further and, as I conceive it, a very interesting proposition—namely, that the vindication of the law is not on the same plane as the vindication of the individual. Whereas the doctor should be, as already stated, freed from his obligation in order to vindicate an individual, he is, generally speaking, not equally justified in throwing aside his obligation for the vindication of the law, the reason being that there are higher considerations than the furtherance of legal processes and which claim his allegiance. And in that respect he is in the same position as the priest. I bring up another point, and these are only scattered examples. If a doctor learns, in his professional capacity, that a crime (not a technical offence) is to be committed, is it his duty to give information to the public authority? In my view, it is. And I think that position is admirably met by the Italian Code, which I referred to a short time ago. If, on the other hand, a crime has already been committed, I am not at all so sure that it is always the duty of the doctor to inform the authority. It will depend on the distinction I have made above as between the individual and the State.

Take this case. Supposing the doctor finds out, in the course of a confidential relationship, that one of his patients has had performed on her an abortion; should he inform the police that such an abortion has been performed? Should he also give any indications he can as to who the offender is? My inclinations say "No," because he cannot do that without inculpating the patient. He is bound to protect that individual who has come to him in a confidential relationship; if once he were to give that patient away, or make a practice of doing so, it would so undermine the confidence of the public as to the secrecy of what passes between doctor and patient, that a greater harm would be done to the public than any possible good result that could ensue in the vindication of justice. I state that somewhat dogmatically, in order to save time; if in these remarks I seem to be dogmatic, I do not mean to be so. They are questions of great difficulty, needing to be discussed by people friendly to the principle of a limited privilege, seated round a table for the purpose. Perhaps these difficulties might be most usefully resolved by limiting medical privilege to civil cases, and I think there is something to be said for that. I do not quite like it, but in those matters we have to adopt practical lines of demarcation.

CONCLUSION.

I have given examples enough; I will not multiply them further. There are certain conditions which will occur to everybody—viz., privilege can be ended with the consent of the patient; privilege might properly be waived where the patient is under 16, in cases of insanity, in cases of malpraxis, and in charges against a doctor involving his professional relationships. No obligation to secrecy extends to medical men in their capacity as skilled witnesses, and, I take it, on that we shall be agreed.

I have only touched lightly on limitations and conditions just to show how ready the profession would be to seek for an adjustment, provided the principle of a measure of medical privilege in courts of law is conceded, as it ought to be, and as both the public and the medical profession desire.

In the demand we make—and, in my opinion, it is a just demand—we are actuated by no paltry motives or narrow professional interests, but by a single-hearted desire to further the good of the community. We regard the protection of the confidences of our patients as vital to that larger confidence of the public on which our power for good must for ever rest. In what we consider a sacred trust we are not unmindful of our duties as citizens, and I venture to appeal with confidence to the members of the sister profession to understand the force of our plea and give us their support.

A Lecture
ON
RADIOLOGY AND PHYSICS.

Being the Mackenzie-Davidson Memorial Lecture delivered on Feb. 17th, 1922,

BY G. W. C. KAYE, O.B.E., M.A., D.Sc.,
HEAD OF THE RADIOLOGY DEPARTMENT AT THE NATIONAL PHYSICAL LABORATORY.

THE appreciation of the physicist by the medical worker in this country is a plant of tender years; there are, I imagine, few radiologists of standing who do not lament that physics played so small a part in their early curriculum. They have grown to realise the enormous part that radiology will play in medicine in the future, and they further realise that, if radiology is to advance as it should, it will have to be continuously correlated with physics. They may not find such correlation very easy, not because the physicists would look askance at the idea, but because so few of them are interested; for the physicist has never been taught to look upon radiology as offering a possible career. Even had he been prepared to risk it, he would not have found the necessary educational facilities.

Coöperation between physicist and radiologist has been given an extended trial, but not to any degree in this country, where there are probably not half a dozen physicists so employed. Before the war most of us were nauseated with the eternal comparisons between the British and German schools of radiology, always to the disparagement of the former, but even then some of us had an uneasy suspicion—which time has completely justified and which recent accounts from visitors to Germany unanimously confirm—that the German had already discovered that the secret of progress in radiology was to bring the medical man and physicist continually together and let them work side by side. He went further and introduced them both to the manufacturer—but that is another story. I merely ask, with all deference—does it look, at the present time, as if our appreciation of German technique and German apparatus has suffered through the war? Erlangen and Freiburg are in a position to answer. On the other hand, is the British radiologist in a position to submit rival techniques, backed up with a corresponding wealth of physical and scientific data? I hope he is, but I fear he is sadly handi-

capped by not being able to rely on his brother physicist for the discharge of duties which he has neither time nor, possibly, inclination to see to himself.

If the Royal Society of Medicine is prepared to give whole-hearted support to these ideas of the future coöperation of the medical man and the physicist, it will have to use its great influence to secure the appointment of part or full time physicists to the various hospitals, and, further, to ensure that the universities and other teaching centres put themselves into a position to provide physicists with courses of instruction calculated to turn out men of the right calibre and training. Such men will be given a sound knowledge of the physics of radiology, and they will, furthermore, be well grounded in electrical engineering, especially on the high-tension side of the subject. By thus ensuring a steady supply of qualified physicists and electro-technicians, who know that in their future work they need not fear that they will not enjoy, both professionally and socially, the full status of their medical colleagues, we can look forward to a desirable all-round improvement in the science and art of British radiology.

PRESENT KNOWLEDGE OF X RAYS.

Within the last decade the secret of the X rays has been revealed, and we have learnt that they are identical with light rays in almost every particular, the main difference being that the wave-lengths of the X rays are much shorter. Until recently, a gap of about four octaves existed between the shortest known ultra-violet ray and the longest X ray, but within the last few weeks it has been discovered that the continuity is complete, and that the X rays follow on, and, indeed, overlap the ultra-violet end of the spectrum. The study of this missing group of octaves had invited attention for some time. The grating method proved unavailing for the purpose, the wave-lengths being too small for our artificially ruled gratings and too big for crystal gratings. Further, at either end of the gap the vacuum spectrometer had proved necessary owing to the extremely absorbable nature of the rays. The problem has finally been attacked with success in this country and America by a number of workers, using indirect photo-electric methods, and they have traced X ray spectrum lines of various elements right across the gap and into the already explored ultra-violet.

The following are the wave-lengths in Angström units—i.e., 10^{-8} cm. of the regions of the spectra we have been discussing: Visible light, 7200 to 4000; ultra-violet light, 4000 to 200; X rays, 500 to 0·06; γ rays, 1·4 to 0·01. Thus we can now claim a knowledge of the existence of over 13 octaves of X rays, or, including radium γ rays, nearly 16 octaves. As yet the radiologist has only turned about three octaves of these to account.

I have referred to X ray spectrum lines; I need not remind you that the parallelism between light rays and X rays is maintained by the presence of spectrum lines in the X ray spectra. Just as the spectrum of a hot body normally consists of a continuous spectrum of white light, together with certain spectrum lines whose wave-lengths are characteristic of the radiating material (e.g., the well-known D line of sodium), so an element emitting X rays not only gives out "white" radiation, but superposes its characteristic lines on the general spectrum. The characteristic X ray spectra are found to be much less complicated than light spectra, and more readily sorted out into groups or series of associated lines. These several series, each of which includes a number of lines, are designated J, K, L, M, and are broadly differentiated by a progressive increase in average wave-length as we pass from one group to another, series J having the shortest wave-length and requiring the highest voltage to excite it. It should be added that all the constituent lines of a group are simultaneously excited.

The Structure of the Atom.

The work on X ray spectra has thrown great light on the structure of the atom; in passing, I might remind you that present-day theory regards all atoms, of whatever kind, as built up of two kinds of "bricks," and two only—(*a*) negatively charged electrons, and (*b*) hydrogen "nuclei," each over 1800 times as heavy as an electron and carrying a charge equal to that on the electron, but positive in sign. Rutherford's nucleus theory of the atom, now universally accepted, regards an atom as built up of a minute positive nucleus (to which practically the whole mass of the atom is attributed) surrounded by a cluster of electrons grouped in rings. The total number of electrons in these rings is equal to the atomic number (N) of the atom in question. The nucleus of the atom is regarded as built up of hydrogen nuclei cemented together by electrons, the former being in excess to just such an extent that the nucleus as a whole contains N positive charges. This serves to counterbalance the N negative charges of the electron rings, the result being an uncharged atom. For example, platinum has an atomic number of 78. Its atomic weight determined chemically is 195. Thus, if platinum is a simple element, the platinum atom has a nucleus composed of 195 hydrogen nuclei and 117 electrons, the difference (78) serving to counterbalance the 78 electrons in the rings. The various elements differ only one from another in that they have different nuclear charges, the nucleus determining the mass and radioactive properties, while the number and grouping of the cluster of electrons in the rings control the chemical and spectroscopic properties. For example, the K radiation is supposed to arise from the displacement of an electron in the innermost ring, the L radiation from the next ring, and so on.

Position and Measurement of the Quantum Limit.

Within the last few years it has been clearly established experimentally by a number of physicists that there is a definite boundary to every spectrum of general X rays on its short wave side. The position of this boundary (or quantum limit, as it is called) is not affected by the nature of the element emitting the X rays, but is solely dependent on the maximum voltage applied to the tube. The relationship is given by the well-known quantum equation of Planck which is ever recurring in physics. Substituting the accepted values of the constants, it follows that

$$\text{max. voltage} = \frac{12{,}400}{\text{shortest wave-length in A.U.}}$$

This very simple relation provides us with a scale of quality which, if not perfect, is more exact than any which the radiologist has been in the habit of using. If we glance at typical spectral curves of X ray emission, we see that they are not symmetrical—the centre of gravity of the curve is well towards the quantum limit—the shortest waves are the dominating ones, still more so if the rays are subjected to normal type filtering. The mean effective wave-length of a spectrum of rays is seen to approximate to the wave-length of the peak of the curve—i.e., the wave-length of maximum intensity. Now there is some evidence that this wave-length of the peak (λ_m) is proportional to the limiting or quantum wave-length (λ_o); in many cases λ_m is approximately 4/3 times λ_o. But in practice it is much easier to measure λ_o than λ_m, and this fact gives an added importance to the measurement of the quantum limit, and enables us so to identify very fairly the quality of a mixed bundle of X rays. No doubt something depends on the wave form of the exciting potential, but the effect of this is probably less important as the voltage is raised. The precision of the method would be enhanced if steps were taken to standardise apparatus and technique, so that all work could be done by the use of, at most, three or four spectra whose distinctive features, including energy distribution, could be determined and specified.

Method of Measurement of Wave-Lengths.

But how is the radiologist going to measure wave-lengths in his operating room? At present, the easiest plan appears to be by measuring the maximum voltage and using Planck's relation. The voltage

can be obtained by use of a reliable type of electrostatic voltmeter, or, failing that, by measuring the alternative gap by means of some approved type of spark-gap such as the sphere gap. We see that such measurements of the peak voltage have a genuine importance. An alternative, and better, plan is to measure the quantum limit by means of a portable direct-reading spectrograph of the type designed in Germany by Seemann and others. Incidentally, these direct-reading spectrographs act as very convenient and accurate high-tension voltmeters, which afford a measure of the true maximum voltage effectively operating a tube.

I have referred above to the effect of the magnitude of the exciting potential on the type of characteristic radiation generated. But in actual fact the radiologist of to-day is probably more concerned with general radiation than characteristic radiation. Here again a knowledge of the exciting voltage is of prime importance to him, particularly in regard to output. For the output of general X rays is proportional to $N\,i\,V^2$, where N is the atomic number of the anticathode, i the current through the tube, and V the exciting voltage on the tube. V is the only factor coming in as a square term, and a small change in V has twice the effect on the output of a correspondingly small change in i. The truth of the above expression can be clearly established from measurements of spectral curves of intensity, in which N, i, and V are varied in turn. One should not be tempted to regard these various spectra as accidental: the distribution shown in the case of, say, 50,000 volts is characteristic of that voltage and of no other, provided the same type of X-ray tube is adhered to. The efficiency of a gas tube is higher than that of a Coolidge and the areas of the spectral curves differ correspondingly.

Let us now consider the surface of a body, at distance d from the target. The quantity of X rays received per unit area in time t is proportional to $N\,i\,V^2\,t/d^2$. This expression is the basis of a system of dosage (kilovolts-milliamperes-minutes) which is probably as accurate and convenient in superficial therapy as any yet devised. We merely want data to give us the constant of proportionality, and here the physicist will have to join forces with the medical worker: it is not only physics but physiology.

Absorption and Scattering of X Rays.

The problem is not so simple in deep therapy. Two things may happen to a beam of X rays when passing through a material. Part of it may be absorbed, which means that it is wholly transformed into characteristic radiations of the material, the process always being accompanied by the liberation of electrons. The rest of the beam is scattered or dispersed; this, in effect, is equivalent to stating that while the rays are unaltered in quality a considerable proportion of them have their direction altered. Scattering, which finds a close parallel in the dispersion of light by a fog, is more pronounced with light atoms than with heavy. Further, just as in absorption, the extent of the effect naturally depends on the closeness of packing of the atoms or the density.

We explain these two effects—absorption and scattering—by supposing that absorption is caused by the flicking off by the X ray of an electron in one of the ring systems in the atom. The outcome is the vibration of the ring systems in question with characteristic periods and the expulsion of an electron from the atom at high speed. If, on the other hand, it happens that the X ray is incapable of definitely ejecting an encountered electron but merely jars it, so to speak, then the electron, having absorbed the energy of the X ray, vibrates, not with its own free period, but with a forced period which is prescribed by the X ray and re-emits its new-found energy in all directions, though chiefly round and about the original direction. With a medium weight or heavy atom the proportion of scattered to absorbed radiation depends upon the wave-length, and may be small. With a light atom the amount of scattered radiation is almost always large.

X RAYS AND THE HUMAN BODY.

The problems of scattering have been under investigation by physicists for many years, but the question has come to the fore recently in radiology in connexion with deep therapy. The human body is made up chiefly of carbon, hydrogen, and oxygen—all light atoms—and its ability to scatter X rays in the adjacent air has long been familiar to radiologists, especially in screening work. But the extent of the scattering within the body itself is just as marked whether the rays are of medium or high penetration. It has been established by Dessauer and others, from measurements made on specified areas at various depths within the tissue, that from 60 to 80 per cent. of the effectiveness of highly penetrating rays is due to scattered rays which were not originally directed at the area in question. In other words, calculations based on absorption data with narrow pencils of rays give results which may, by reason of scattering, be several hundred per cent. too small when compared with the results of experiment with ordinary divergent beams.

Protection of the Operator.

I should like to devote a few words to the subject of protection, more particularly in the case of X rays. It will be fresh in the minds of most how a series of casualties to prominent radiologists a year or so ago alarmed the public mind. The situation had to be met and the various radiological societies and institutions in London coöperated in the formation of a representative committee, who were asked to go into the whole question and draw up recommendations for the guidance of all concerned. It was agreed that the question of the protection of the operator was the sole issue: the existing measures had proved to be adequate so far as the patient was concerned. The word "protection" was to be interpreted in a wide sense.

The Protection Committee was fortunate in securing Sir Humphry Rolleston as chairman, and under his eminent leadership has already drawn up two memoranda. The second is on the point of publication; the first, issued last July, has received general approval for the thorough yet reasonable nature of its suggestions. I need not refer to them in great detail here, but they have already been widely acted upon, and I feel sure that presently the bogey of X ray dangers will have been removed. In years to come this country will be entitled to congratulate itself on having given a lead to the world in this matter. The Committee has laid down certain standards of protection against X and γ rays, expressed very simply in terms of the equivalent thickness of sheet lead. These thicknesses were based on available experimental data—for example, the X rays from a tube excited by about 180,000 volts are cut down over 10,000 times by 3 mm. of lead, and over 1,000,000 times by 10 mm. of lead. The choice of the actual protective material may, of course, be determined by insulating, electrostatic, or other considerations, but its thickness should be such as to provide protection equivalent to the amount of lead specified.

The Committee sought and secured the coöperation of the National Physical Laboratory, both in investigatory work and in the question of the inspection of existing X ray departments in hospitals and other institutions. The N.P.L., to use the laboratory's well-established initials, has thrown itself into this work and has already inspected a number of the X ray departments throughout the country. Hospitals are chary of spending money just now, but the big London hospitals are giving a lead, and we may expect that many others will seek similar assurance on the score of X ray protection. I have had the privilege of judging, in some cases first-hand, the conditions which obtain at a number of hospitals; if these may be regarded as typical—and I fear they may—the Protection Committee needs no justification in its labours.

Defects of Protection.

A small proportion of departments were reasonably satisfactory, the majority very unsatisfactory. In

some instances the protection for the operator was lamentably inadequate. We have taken with us in our inspection work delicate electroscopes, with the object of exploring the extent of the scattered radiation in different parts of the X ray rooms. In some cases it was impossible to use them at all; we had to content ourselves with noting the comparative ease with which we could see the bones of the hand on a screen as it was carried round the room. This with the protective appliances in full action! The Committee has adopted the common-sense principle that, wherever possible, the tube box or enclosure should form a complete shield in all directions, allowing only the minimum aperture for the work in hand. Few installations subscribe to this very reasonable demand.

It is established that ventilation is of prime importance, but many hospitals apparently regard the radiologist as akin to a mole or earthworm which prefers to conduct its nefarious operations underground! Whatever is the real reason, we generally find the radiological department stowed away in the basement. Ventilation difficulties are usually multiplied tenfold in consequence, and further, the rooms are largely shut off from the beneficent effects of sunshine. How can a radiologist continue to do his best work under such conditions? Why should his department not be above ground?

We examine the high-tension system and find, in nine cases out of ten, it consists of stretched overhead small-gauge wires, connected by spring tapes, or spirally-wound fine wires to the various apparatus. The coronal or brush discharge, when viewed in the dark, suggests a Brock's benefit night at the Crystal Palace! Naturally, ozone is produced in abundance and, as extractor fans are rarely fitted, the unfortunate operator gets the full benefit. If the apparatus is only occasionally used, as in some country hospitals, the practice of relying solely for ventilation on an open window may not be so serious as in a busy town hospital; but, unfortunately, that open window is often effectually blocked by a light-tight shutter for most of the day. The Committee has recommended the use of smooth tubes or rods or heavily insulated wires with the object of abolishing the evils of brush discharge. It suggests the employment of commodious rooms with ample head room, especially in the case of deep therapy outfits where the exciting voltages are in the region of 200,000. Another danger is here indicated: more than one fatality has been occasioned by accidental discharge to an operator working in a small room with slack or looped high-tension wires. Again, ventilation questions are often especially troublesome in a cubicle.

Attention has been paid to the question of scattering, as some of the materials used in X ray equipment, such as plywood, are prolific scatterers of X rays and protection is needed in unexpected directions in consequence. The Committee did not forget the question of floor coverings, knowing that appropriate material has often prevented a nasty accident. Generous recognition should be paid to the X ray manufacturers of this country for the way they are beginning to coöperate with the Committee. British X ray manufacturers, divided as they are, are mostly carrying on under great difficulties at the present time; despite this, however, almost all of them have taken steps to obtain from the National Physical Laboratory test figures for the various protective materials which they are incorporating into existing and new installations. Such measurements are rapidly and inexpensively carried out by the laboratory, and no radiologist need deny himself the security which the N.P.L. certificate affords. The laboratory experience amply confirms the necessity for such tests. For example, we have tested lead glass, of which only 5 mm. were required to give the protection of 1 mm. of lead. For other samples of glass as much as 10 mm. were required. The corresponding figures for lead rubber show variations between 1·7 mm. and 4 mm. as the equivalent of 1 mm. of lead. Thus, with either protective material a manufacturer can easily be 100 per cent. out in his reckoning if he employs uncertified material. He owes it to himself and his customers to take no such risks.

CONCLUSION.

Finally, mention of the Protection Committee brings me to another topic. I do not need to inform you that the activities of British radiology are divided among several societies. In the formation of the Protection Committee the several societies have coöperated, for almost the first time, in providing means for achieving a result of common value to them all. May we take it as a good omen? Would the societies be acting wisely, for instance, in inviting the Protection Committee to take an enlarged view of its functions and tackle other questions, such as dosage and the specification of a unit of intensity of X rays? Better still, cannot the societies put their heads together and lay the foundations of an organisation, the management of which would be vested in the elected representatives of the several societies, and which could then fairly claim to represent the whole of British radiology? Here would be the beginning of an Institute of Radiology. It would necessarily be an institute without a home at first; bricks and mortar might follow some day in more propitious times. No question of amalgamating the societies would be involved, they would each pursue their own interests in their own fashion, but confident in the knowledge that when common interests were involved their representatives on the institute would take such joint action as seemed to them best for British radiology. For example, had such an institute existed now, it would probably have coöperated with the British Engineering Standards Association in its efforts to standardise X ray and electro-medical nomenclature. The Institute of Radiology would naturally become the custodian of British interests when international matters arose in radiology.

Two noteworthy steps, pregnant with promise for the future of radiology, were taken in the establishment of the Diploma in Radiology and the formation of the Society of Radiographers. Here again this country has taken the lead. And when some day we have an Institute of Radiology, with which I hope it may be possible in some way to associate Mackenzie-Davidson's name, and when we also have a British Journal of Radiology, combining the divided interests of the present publications, then two further great steps will have been taken to assist radiology in this country to take the proud position among the sciences to which its important and beneficent activities entitle it.

TWO SERIES OF CASES OF CATARACT.

BY ARTHUR C. ROPER, F.R.C.S. EDIN.,

CONSULTING SURGEON TO WEST OF ENGLAND EYE INFIRMARY, EXETER; VICE-PRESIDENT OF SOUTH-WESTERN OPHTHALMOLOGICAL SOCIETY.

I. RESULT OF THIRTY CASES.

DURING 1907[1] I published in THE LANCET a tabulated record of 26 cases in which I had operated for senile cataract on the second eye, and I now give the result of 30 other cases.

(A) = Present series of 30 cases. (B) = Previous series of 26 cases.

	(A)	(B)
Similar result in both eyes ..	28 per cent.	53 per cent.
Better result in second eye ..	24 ,,	15 ,,
Worse result in second eye ..	48 ,,	27 ,,

The result in the second series is not as good as in the former series, which showed 69 per cent. of results at least as good in the second eye as in the first; but the record is interesting, as showing the total and unexpurgated experience of one operator. The cases are as follows.

[1] THE LANCET, 1907, ii., 1679.

Second Eye Extractions.

No.	Sex.	Age.	1st Eye.	2nd Eye.	No.	Sex.	Age.	1st Eye.	2nd Eye.
1	F.	43	0	6/18	16	M.	71	6/6	6/12
2	M.	44	6/5	6/6	17	F.	57	N.r.	4/60
3	M.	70	6/6	6/9	18	M.	77	6/12	6/24
4	M.	57	6/18	6/24	19	M.	54	6/12	N.r.
5	M.	62	6/6	6/6	20	F.	62	6/9	6/36
6	M.	64	—	N.r.	21	M.	69	0	0
7	M.	56	6/9	6/12	22	M.	59	6/12	N.r.
8	F.	51	6/5	6/9 & J.1	23	M.	73	6/12	N.r.
					24	M.	53	6/12	6/36
9	M.	66	6/24	6/18	25	—	62	6/6	6/6
10	M.	69	6/36	6/9	26	F.	76	6/18	6/18
11	M.	67	6/36	N.r.	27	F.	67	6/9	6/9
12	F.	60?	6/9	6/9	28	F.	55	6/6	6/5
13	M.	77	6/9	6/18	29	M.	67	6/6	6/9
14	F.	62	6/9	6/24	30	F.	80	0	6/12
15	M.	67	L.o.	6/12					

N.r. = No record. L.o. = Large objects.

Remarks.—Case 1. First eye: fluid lens; opaque vitreous. 4. Both eyes look normal. 6. Illiterate; sees well in first eye. 10. First eye operated elsewhere. 13. First eye: Mr. J. Bankart's operation. Second eye: lens over-mature, done on off-chance. 14. No difference between the eyes detected. 15. Cholesterin degeneration of vitreous in first eye. 16. Corneal nebula second eye. 18. Slight sloughing of wound in second eye. 20. Second eye: Last note says, "requires needling." 21. First eye: Slow suppuration on seventh day. Second eye: Slow necrosis of cornea on fifth day. 24. Second eye "requires needling." 25. First eye: Mr. J. B. Lawford's operation. Second eye: My operation. 27. Diabetic. First eye lost from irido-cyclitis two years after operation. 29. First eye lost from glaucoma two years later. 30. First eye lost from early suppuration. Not my operation.

II. RESULT OF FOUR HUNDRED AND EIGHTY-NINE CASES.

In 1907 I also published a series of cataract cases in the *Ophthalmoscope*;[1] the latter were 152 in number, and I have since then done 337 cases, a total of 489, of which I have notes. There are 79 cases of which I have no note of the resulting vision; several of them are noted as "require needling," but evidently did not return to hospital for the operation. This was largely due to the war conditions, when I was working in the general hospital, the Eye Infirmary having been given up to the Red Cross Association, with a few beds only at my disposal. Train service to distant country places was scanty and costly, while shortage of beds made it impossible to keep patients under observation longer than was absolutely necessary. The cases are consecutive, all are entered, and many were done on the off-chance of getting some sight—for example, several cases of lens opacity coming on after irido-cyclitis, a very common disease in these parts of the country. The operation of election with me is the simple extraction without iridectomy, but I do an iridectomy at the time of extraction if the patient has any sign of morning cough, is likely to be restless after operation, or has synechiæ.

I do not propose to burden this account of the second series of extractions with comments, but append notes of most of the unsuccessful cases, and of some of those whose resulting vision was unsatisfactory. I believe that all cases of lost eye are recorded, and they comprise:—

1 case of early suppuration; 1 case of slow suppuration on the seventh day; 1 case, same patient as last, of slow necrosis of cornea, beginning on fifth day, the eye gradually shrinking without suppurating—it was thought that slightly catarrhal lids caused the first failure, and he was an in-patient for a month before the second operation for special treatment of the lids; 6 cases of irido-cyclitis, one in an old iritic eye; 1 case of retinitis pigmentosa, done in the hope of some sight resulting; 1 post-operative glaucoma; 1 post-operative hæmorrhage, half an hour after being bedded; 1 opaque vitreous following old iritis.

Of cases with vision not 6/60: 4 irido-cyclitis in old iritic eyes; 1 old macular choroiditis; 4 high myopia; 3 eyes apparently looking perfect, no reason for bad vision discovered; 2 had been trephined for glaucoma; 1 old glaucoma, not previously operated on; 1 divergent eye, done for cosmetic effect; 1 Morgagnian cataract; 1 macular hæmorrhage, probably during convalescence.

Cases of vision of 6/60 only: 2 corneal nebulæ; 1 high myopia; 1 vitreous opacities; 1 Morgagnian cataract.

[1] Ophthalmoscope, October, 1907.

	Total Results. Per cent.	1st Series.* Per cent.	2nd Series. Per cent.
Vision 0	6·49	7·69	5·3
not 6/60	7·61	6·15	11·07
6/60	3·37	4·61	2·14
6/36	5·67	3·84	7·5
6/24	8·63	6·92	10·35
6/18	10·7	12·3	7·85
6/12	16·85	14·07	19·64
6/9	22·25	25·58	18·92
6/6	13·9	15·81	12·14
6/5	4·42	3·84	5·0

* Already published.

In conclusion, let me say that I think these results go far to confirm an opinion expressed to me by Mr. Harrison Butler, with which I cordially agreed, that the prevention or rapid cure of irido-cyclitis would go a long way towards removing the dangerous sequelæ of cataract extraction. I cannot agree with the opinion which I understood Prof. Victor Morax to express at the last Oxford Ophthalmological Congress, that it is due to faulty technique. I feel sure that it is mostly an auto-infection. The disease is so common in Devon, especially in low-lying, damp and foggy districts, that it seems reasonable to suppose that a trauma, such as a cataract operation, might start it in a person previously disposed to it. A few weeks ago a male patient came to a nursing home for me to extract a cataract; I always like patients to have two days in the home before I operate, and he was there for that time. I went at the appointed time, but before going to the theatre asked the patient how he had slept. He said, "Not very well, my neck is stiff." I found on examining his neck that there was a deep-seated cellulitis, probably carbuncular, commencing. I told him I should not operate that day, and gave the reason; he said, "Oh! it's nothing; I had a carbuncle near there last summer." I regard that as a near escape from disaster, and think that, if I had operated two days before, there would very likely have been suppuration from auto-infection in the eye. He went home, and has since had another carbuncle in his side.

THE DANGER OF "STEEL SCRUBBERS":

FOUR CASES OF EXTRACTION OF WIRE FROM LARYNX AND PHARYNX.

BY ANDREW WYLIE, M.D. GLASG.,

SURGEON, CENTRAL LONDON THROAT AND EAR HOSPITAL.

I HAVE had several cases lately of pieces of wire in the throat and larynx, and Dr. A. Rose, of South Norwood, and others have called my attention to such cases in their practice. These small pieces of wire get embedded in the tonsils and the base of the tongue, or even get into the arytenoids of the larynx and cause great suffering, and serious results might follow. The patients who consulted me seemed to experience far more discomfort than in cases where a fish-bone was swallowed. This condition is the result of cooks cleaning the kitchen utensils with a steel scrubber, sold for that purpose. The "scrubber" consists of a quantity of steel shavings rolled into a ball, and in the process of time, some pieces of the steel get detached by the constant use of the scrubber, and being very small and almost colourless, escape the cook's notice and are served with the food.

The following are the notes of four such cases:—

CASE 1.—Woman, aged 57, consulted me on Nov. 2nd, 1921, saying she had swallowed a needle two days previously when taking her supper. She at once consulted her doctor but he could not find anything. For two days she was in great pain and could not swallow. After a thorough laryngoscopic examination I saw a small object buried in the right arytenoid cartilage. It was extracted with Mackenzie's forceps after repeated attempts, for as soon as the forceps touched the wire it became buried in the tissue. It was found to be a piece of wire 1 in. long, similar to the wires in a steel brush. In a few days the patient was well.

CASE 2.—Man, aged 26, came to my clinic saying he had swallowed a fish-bone the previous night and had not slept since. I could see nothing, but he declared emphatically that something was there, and after repeated examinations with the laryngoscope a small object was seen at the base of the tongue. I grasped this with a pair of bent forceps, and a small piece of wire about ¼ in. long was extracted. It had the appearance of being broken from a steel scrubber.

CASE 3.—Man, aged 50, consulted me about a sore-throat of three days' duration. The pain came suddenly one morning after breakfast. On examination, the left tonsil was seen to be swollen and parts of both pillars were red and inflamed. On probing the tonsil to find pus, a small foreign body was exuded, which the patient expectorated. It was found to be a minute particle of steel resembling the shavings of which a steel scrubber is composed. In 24 hours the throat was well.

CASE 4 (under Dr. A. Rose).—Patient, male, aged 28, consulted Dr. Rose one evening complaining of considerable pain and discomfort in the throat after swallowing some custard. Nothing was seen in the pharynx, but by laryngoscopic examination Dr. Rose saw a small foreign body lying across the larynx, sticking to the right arytenoid cartilage. He passed a pair of forceps and in doing so touched the epiglottis. A spasm resulted and the foreign body was expectorated. It was like a needle and similar to the wire from a steel brush.

Remarks.

The wires in two cases were pieces broken from a steel brush used by cooks to clean kitchen utensils. In the other two cases the wires were similar to the steel shavings of which a steel scrubber is composed. The danger of using such articles for cleaning is obvious.

ALKALIPENIA.

WITH REFERENCE TO ACIDOSIS AS OBSERVED IN CHILDREN.

BY A. D. SYMONS, M.D., CH.B. BRISTOL, D.P.H.,
ASSISTANT RESIDENT MEDICAL OFFICER, HAM GREEN ISOLATION HOSPITAL AND SANATORIUM, BRISTOL.

THE term acidosis, loosely used in the past, has been misapplied to all sorts of conditions, which, though they may constitute a tendency towards acidosis, are not in themselves a serious menace to the life of the individual as is true acidosis, and this fact was impressed on me during some recent work at a children's hospital, and led me to adopt the more correct term alkalipenia which speaks for itself. Starting from the basis that the term acidosis cannot be applied with scientific accuracy to all cases, terms must be employed which are descriptive and which coincide with the particular physiological, pathological, or chemical state; the following nomenclature suggested by the Medical Research Council has been partially adopted.

A.—Blood reaction	More acid than normal		Acidæmia.
	More alkaline than normal		Alkalæmia.
B.—Body alkali reserve	Increased		Alkalosis.
	Diminished	Alkali combined with fixed acid.	Compensated acidosis.
		Alkali depleted.	Alkalipenia.
C.—Acetone bodies present			Ketosis.

The results of my clinical investigations were obtained without resort to complicated apparatus or special laboratory methods.

Uses of the Term "Acidosis."

It is now known that acidosis can occur without the presence of ketones in abnormal amounts in blood or urine, and without a disturbance of the urea-ammonia ratio; and attention has been riveted in the last few years on such conditions as pneumonia, influenza, diarrhœa of infants, cholera, uræmia, diphtheria, malaria, rheumatic fever, and anæsthesia, in all of which conditions an acidosis may become established. The best definition of acidosis is that given by Sellards[1]: "Acidosis is a diminution in the reserve supply of fixed bases in the blood and other tissues of the body, the physico-chemical reaction of the blood remaining unchanged except in very extreme conditions. The definition should not be limited to the carbonates alone, but should include the other fixed bases of the body; likewise, the changes should not be limited to the blood but should include the other tissues as well." It will be seen that this definition makes no reference to acetone bodies or ammonia excretion, although an acetone body acidosis or ketosis can be covered by the above description.

Some writers have used the term *compensated and uncompensated acidosis*, but as, strictly speaking, all normal individuals are in a state of compensated acidosis, seeing that normal metabolism gives rise to an excess of acid radicals which must be either neutralised or excreted, the term is undesirable. Other writers have used the term *relative acidosis* when referring to the cholera of infants, in contrast to the *absolute acidosis* of diabetes, but these terms are not helpful or of any value.

The reaction of the blood is maintained by three processes which are in continuous activity under the control of the regulating centres—namely, (1) oxidation, (2) neutralisation, (3) elimination. It is vital that the reaction of the blood should be almost a constant, and in health there is a definite equilibrium maintained at the expense of the other tissues of the body; the reaction is determined by the ratio $\frac{H_2CO_3}{NaHCO_3} = \frac{1}{20}$ which is constant in health. In acidosis the value is increased, and then the organism makes an effort to re-establish the equilibrium by increasing the amount of the denominator, which is done by drawing on the $NaHCO_3$ reserve in the tissues. The gradual drainage of this $NaHCO_3$ reserve gives rise to the state of alkalipenia of varying degree, and acidosis only sets in when the supply is almost exhausted. The onset of acidosis can be diagnosed clinically by certain features such as hyperpnœa or air hunger, with which is sometimes associated a brick-red colour of cheeks or mucous membranes. Oliguria or complete anuria and constipation very often coexist.

Production of Alkaline Urine in Normal Subjects.

Alkalipenia does not display itself, but it can be detected and corrected, and possibly the occurrence of acidosis prevented, by a simple test devised by Sellards, known as the bicarbonate tolerance test. Sellards found that a normal adult requires approximately 5 g. of $NaHCO_3$ to render the urine alkaline (1 g. = 15·4 gr.). The urine of a normal infant will become alkaline after the ingestion of 20–40 gr. In acidosis, as manifested clinically by the onset of hyperpnœa, approximately 100 g. (1540 gr.) are required to produce an alkaline urine, and in severe cases even up to 200 g. (3080 gr.). Over 200 g. death ensues. We see, then, that before the onset of true acidosis occurs there must be a depletion of 20, 30, or 40 times the normal quantity.

Employing this test with modifications, suggested by Harding[2] for grading purposes, I have devised a table with proportionate doses for different ages, in the different grades, assuming that the alkali reserve is a function of body-weight, to denote whether the case is one of alkalipenia or acidosis proper. (Table I.) It is, of course, realised that no hard-and-fast law can be laid down, as the human factor is a variable quantity, but the method of roughly grouping cases as shown in the table gives one a mental picture and is of help in prognosis.

The value of the test lies in the fact that it is diagnostic and therapeutic at one and the same time, and that one is restoring a natural constituent of the body, and not merely drugging the patient. With regard to the therapeutics of sodium bicarbonate

Dixon[3] states that any drug which increases the alkalinity of the tissues stimulates metabolism and increases the oxidation of proteins and fats, and moreover sodium bicarbonate possesses the property of promoting a free secretion of urine even though there may have been complete anuria for two or three days.

TABLE I.

Grade.	Adult dose in grains.			Adults. (15·4 gr. = 1 g.).	
	1/4	1/2	3/4		
	1–5 yrs.	5–10 yrs.	10–15 yrs.	Gr.	G.
A ..	20– 40	40– 77	60– 116	77– 154	5– 10
B ..	40– 77	77– 154	116– 230	154– 308	10– 20
C ..	77–154	154– 308	230– 462	308– 616	20– 30
D ..	154–230	308– 462	462– 693	616– 924	40– 60
E ..	230–385	462– 770	693–1155	924–1540	60–100
F ..	385–577	770–1155	1155–1731	1540–2310	100–150
G ..	577–770	1155–1540	1731–2310	2310–3080	150–200

A = Normal tolerance. B = Mild alkalipenia. C = Moderate alkalipenia. D = Marked alkalipenia. E = Severe alkalipenia. F = Acidosis. G = Severe acidosis.

The kidneys will excrete this sodium bicarbonate, even if diseased, when the body alkali reserve has been restored to normal.

A Remodelled Nomenclature.

At this point it is appropriate to remodel the nomenclature suggested by the Medical Research Council as follows :—

A.—Body alkali reserve — Almost exhausted = Acidosis.
Partially depleted = Alkalipenia.
Slightly increased = Alkalosis.
B.—Acetone bodies present .. .. = Ketosis.

Thus, alkalipenia is a term intended to convey the meaning of partial depletion of the body alkali reserve, and that not until that reserve is almost exhausted does acidosis occur. To bridge the gap between a normal alkali reserve and an exhausted alkali reserve I have used intermediate terms, retaining the word alkalipenia, and prefixing a descriptive adjective such as mild, moderate, marked, or severe. These different degrees of alkalipenia coincide with the amount of alkali required to re-establish the alkali reserve as determined by the alteration in reaction of the urine from acid to alkaline, knowing that it requires 5 g. of $NaHCO_3$ for a normal adult, and 30–40 times that amount for a case of acidosis. It must be pointed out that the alkali reserve of the body does not consist of sodium bicarbonate alone, but includes the other fixed bases of the body, such as potassium, calcium, and magnesium, although, of course, sodium bicarbonate is the most important.

Bicarbonate Tolerance Tests.

I have carried out bicarbonate tolerance tests in various diseases in children, with interesting and beneficial results. Out of 63 tolerance tests performed, 20 cases showed a normal tolerance, including 5 cases of chorea, 4 of bronchitis, 3 of phthisis, 2 of impetigo, and 6 miscellaneous cases. Of these 63 cases, 60 were discharged cured, and the remaining 3, which were classed as cases of acidosis, died before the tolerance test had been completed.

Technique of Test.—Children were given a dose of sodium bicarbonate, 30 gr. every two hours, day and night, until the urine was alkaline to litmus, the urine being tested at these intervals. If a specimen was unobtainable a further dose was given, because experience showed that once the urine was alkaline, the oliguria would have been overcome and a free secretion ensued. As soon as the litmus paper showed an alkaline reaction it was gently heated until dry. If the alkalinity was due to volatile ammonia, this would be driven off and the paper would turn red again, whereas if due to fixed alkali it would remain blue. The tolerance test was stopped when alkalisation occurred, and the number of doses given added and compared with the table already set out in order to grade the case. A tolerance test can thus be carried out even in cases of ammoniacal cystitis. It is advisable to give plenty of fluids by mouth in order to help the promotion of diuresis. For adults the dose can be doubled to 60 gr. two-hourly.

Clinical Observations in Various Diseases.

Pneumonia.—It has been thought that an acidosis may account for some of the symptoms in certain cases. What is the cause of the increased respiration rate? Two points of view must be considered. First, is the respiratory centre stimulated to increased activity through lack of oxygen? If this is so, the increased efforts to obtain more oxygen will automatically wash out excess of CO_2, provided there is not an increased production of CO_2. If the rapid breathing is maintained, a state of alkalosis will set in due to anoxæmia and to loss of too much CO_2 in the effort to obtain a sufficient oxygen supply. Secondly, is the respiratory centre stimulated to increased activity through excess of acid, in other words, CO_2? Consider the chemical physiology of lobar pneumonia: (1) There is a decreased general metabolism with an increased katabolism—a tendency to the formation of acid intermediary products through incomplete oxidation; (2) there is pyrexia, with which is associated a lowered blood pressure, and a cloudy swelling of parenchymatous cells, involving, among other structures, the kidneys and impairing their function, as demonstrated by oliguria or by the appearance of febrile albuminuria, and favouring the accumulation of acid; (3) there is the local production of acid toxin by the bacteria themselves.

It will be seen, therefore, that there is some complication in deciding as to whether an excess of acids or a lack of oxygen is the stimulus to the respiratory centre, or whether there is a combination of the two. If lack of oxygen is the stimulus, then alkali therapy would be harmful, whereas if excess of acid is the stimulus alkalies would be beneficial. In the present uncertain state of knowledge regarding this problem, one may provisionally believe that excess of acid is the first stimulus, and that there is a severe alkalipenia or a mild acidosis. If the condition becomes worse, and the respiration rate becomes so rapid—i.e., above 50 and correspondingly shallow—that a state of anoxæmia sets in, this will lead towards an alkalosis. Clinical deductions from this are that alkalies are beneficial up to a certain point, and are dangerous when the rapid shallow breathing occurs, due to anoxæmia. It was decided to carry out tolerance tests in cases of pneumonia, especially as Vivaldi, Weauer, and Marcialis had all obtained excellent results in the treatment of pneumonia with sodium citrate in 15 gr. doses, two-hourly, day and night, which acted, they state, (1) by decreasing the coagulability of the blood and thus aiding the re-establishment of the cardio-pulmonary circulation, and (2) by maintaining the alkalinity of the blood. Since writing this paper I see that Means and Barach[4] report favourable results from the administration of sodium bicarbonate in conjunction with oxygen, supplemented by specific therapy in cases of pneumonia.

TABLE II.

Case.	Age yrs.	Gr. of $NaHCO_3$	Grade.	Disease.	Result.
B. G. ..	3	660	Severe acidosis.	Broncho-pneum.	C
J. L. ..	1	250 +	Acidosis.	,,	D
G. H. W.	6	390 +	Severe alk.	Lobar pneum.	D
R. G...	2½	300	,,	Broncho-pneum.	C
F. D. ..	4	340	,,	,,	C
K. R. ..	1½	240	,,	,,	C
D. D. ..	13	300	Mod. alk.	Lobar pneum.	C

Alk. = Alkalipenia. C = Cured. D = Died.

The cases shown in Table II. were investigated, and the two cases that died did so before completion of the tolerance test. Similar results have been obtained in other cases. The main features noticed were that though the physical signs in the lungs remained for some time after the urine had been rendered alkaline, the temperature dropped to normal

or subnormal, the signs of toxæmia and distress rapidly disappeared, and the children sat up in bed and played with toys. No other treatment was given whilst a tolerance test was in progress, but afterwards expectorant mixtures or tonics were given during the convalescent stage.

Other Acute Infections.—I determined to repeat this experiment in other acute infections, especially after the results obtained by Harding,[5] who, in cases of infectious diseases in children and adults, arrived at the following conclusions: (1) Some degree of acidosis may be a concomitant of the early stage of some, at all events, of the acute infections; (2) children are more often affected than adults; (3) other things being equal, a high temperature is more likely to be associated with acidosis than a low one; (4) repeated vomiting is often present in cases with a marked acidosis; (5) early oliguria is occasionally associated with an increased alkali tolerance—in such cases the flow of urine may become free when the acidosis is overcome; (6) septic infection of the throat seems to render the patient liable to acidosis.

The following miscellaneous cases are quoted to show the association of alkalipenia with bacterial invasion which produces toxæmia and other symptoms of varied nature (Table III.).

TABLE III.

Case.	Age years.	Sod. bicarb. gr.	Grade.	Disease.	Result.
E. C. ..	2½	590	Severe acidosis.	Ketosis.	C
D. H. ..	8/12	420 +	,,	Diarrhœa and vomiting.	D
D. P. ..	2½	570	Acidosis.	Cyclical vomiting.	C
F. H. ..	4½	510	Severe alk.	Acute septic tonsillitis.	C
S. S. ..	3½	210	Marked alk.	Whooping-cough.	C
P. G. ..	11	330	Mod. alk.	Acute nephritis.	I
D. R. ..	7	270	,,	Acute pyelitis (*B. coli*).	C
P. T. W.	10	300	,,	Acute rheumatism.	C
C. G. ..	7	300	,,	Pericarditis.	I
A. B. ..	11	240	,,	Acute rheumatism.	C
W. P. ..	10	210	,,	Double mitral disease.	I
T. N. ..	12	315	,,	Diphtheria.	C

Alk. = Alkalipenia. C = Cured. D = Died. I = Improved.

In those cases, due to invasion by pathogenic organisms, the pyrexia, constipation, oliguria, and lowered blood pressure were accompanied by alkalipenia, but not by clinical signs of acidosis. Ketones were almost invariably present in the urine, but not in sufficient quantity to deplete the alkali reserve. The main features noticed were that when the urine became alkaline, it coincided with a fall in temperature to normal or thereabouts and a disappearance of the toxæmic condition. It is permissible to ask whether these results were due to an alkali retention, rather than an alkali depletion owing to an upset of normal renal function; the answer is that almost without exception the urine became acid again a few hours after the completion of the tolerance test.

Finally, with regard to the favourable results obtained in the treatment of pneumonia by alkalies, an interesting idea occurs to one in connexion with some work done by Hirsch,[6] who determined the blood alkali reserve in experimental infections. He found that the alkali reserve was lowered coincidentally with the leucopenia, but that during the subsequent leucocytosis it rose to or exceeded the level determined originally. These changes occurred within about 24 hours. Does this result suggest that the fatal termination of a case of pneumonia, in the absence of leucocytosis, is associated with an alkalipenia? In other words, what connexion is there between a leucopenia and an alkalipenia in infectious and bacterial disease? Influenza is a disease in which acidosis or a severe alkalipenia can occur, and Douglas[7] found leucopenia to be the rule in epidemic influenza.

Conditions due to Metabolic Toxins.

I now want to consider a set of conditions in which there may be an alkalipenia—conditions due to metabolic toxins as contrasted with the previously discussed bacterial toxins. Some of these complaints have been associated in the past with acidosis because of the occurrence of ketonuria. I think it is more correct to designate them as cases of alkalipenia, and the ketonuria is more often an accompaniment or an indication of the condition, rather than an actual cause of the alkalipenia. The following complaints are grouped together for convenience, partly because they possess one or more common ætiological factors: asthma, eczema, urticaria, migraine, epilepsy, and eclampsia. It is desired to show that these varied states possess more than one common feature, alkalipenia being one of them. Modern research is showing that these conditions can be caused by sensitisation to foreign protein, or, according to previous ideas, to anaphylaxis. The toxic products of the partial cleavage of proteins, if not destroyed either by the digestive juices or in the liver, are supposed to cause an autolysis of body protein, and a hypothesis derived from Dale's work can be constituted to the effect that the tissue changes in anaphylaxis are due to some cleavage product of body protein akin to or identical with histamine. This tissue autolysis in itself is attended by the formation of abnormal acid products.

Auld[8] has pointed out that the protein poison has been found to pertain to the acidic portion of the molecule, and its effects are to some extent neutralised by the simultaneous introduction into the body of alkali. The similarity between states of traumatic shock, especially when there is absorption from injured autolysing tissues, and collapse in rapidly generalised infection has long been recognised; protein sensitisation or "anaphylactic shock" may perhaps now be included.

Asthma.—Apart from renal or cardiac asthma, there is a type of asthma now associated with sensitiveness to a foreign protein, ingested or inhaled either as vegetable pollens or animal particles. Some subjects of asthma may at other times suffer from hay fever, urticaria, or eczema, and Osler[9] has mentioned the alternation of asthma and epilepsy. Donnelly[10] points out that a food anaphylaxis may be the chief ætiological factor in asthma in children, and has found calcium chloride of service between the attacks, and also recommends sodium bicarbonate. I think there is no doubt that in such cases of asthma the beneficial results, which many have obtained by the use of alkalies, are due to the correction of a temporary alkalipenia. Ketonuria occurs in many cases of asthma.

Eczema.—The alternation of asthma and eczema is well known. I have found acetone bodies to be present in cases of eczema, and have had encouraging results from the administration of alkalies in conjunction with other treatment.

Urticaria.—I have not had any opportunity of testing cases either for the presence of acetone bodies, or for the tolerance for alkali during an attack.

Migraine.—Migraine is now considered to be caused by one of these metabolic explosions, due to certain food substances and dependent upon a state of anaphylaxis. It is interesting to note that English[11] has seen babies that suffered from cyclical vomiting grow up and have migraine; furthermore, it is instructive to note that large amounts of acetone bodies appear in the urine, together with a marked degree of alkalipenia in both these conditions.

Epilepsy.—Epilepsy of the idiopathic variety is now being considered as a manifestation of anaphylaxis. Timme[12] believes that there is a failure of the thyro-parathyroid apparatus to remove toxins which are of the nature of split protein and amino-acids, and that the retention in the tissues of these partial decomposition products brings about the seizure. Edgeworth,[13] working on much the same lines, made

observations on the effect of intravenous protein therapy in epileptics, and Shaw[14] found that in epileptics there was a large output of acetone bodies in the urine, and he established permanent and temporary cures by giving large doses of sodium bicarbonate. Lalor and Haddow[15] compare epilepsy with eclampsia and other toxæmic conditions. Observation of patients showed that fits occurred after a period of diminished nitrogen excretion: and the observation that most fits occur at night when the patient is at the height of his "acid tide" is also applicable to asthma.

Eclampsia.—It is well known that acidosis or a severe alkalipenia can occur in eclampsia and the toxæmias of pregnancy, that there is often a large amount of ketonuria, and that sodium bicarbonate is of great value in treatment. Clifford White[16] recently carried out bicarbonate tolerance tests after Sellards's method in several cases of eclampsia and toxæmias, and comparing the amounts necessary to render the urine alkaline with the table I have drawn up, I find that the results showed 3 cases of mild, 6 of moderate, 1 of marked, and 4 of severe alkalipenia, and 1 case of acidosis, which died and which required 1848 gr. of $NaHCO_3$. The cases of alkalipenia all recovered.

Reviewing these six conditions generally, it seems to appear that dietetic causes primarily induce an anaphylactic state, which in its turn leads to autolysis, the features of this autolysis being evidenced in different tissues at different times, and accompanied by ketonuria and alkalipenia. In all anaphylactic conditions there is also a coexistent eosinophilia and a leucopenia.[17] It is obvious, therefore, that we have several ways of establishing a differential diagnosis with a view to curative as well as palliative treatment.

A tabulation of the six metabolic complaints just discussed proves interesting, and it remains for further research to show whether there is any connexion between the states of ketonuria, alkalipenia, leucopenia, and eosinophilia. Reference has already been made to a possible connexion between alkalipenia and leucopenia (Table IV).

TABLE IV.

Complaint.	Ketonuria.	Alkalipenia.	Leucopenia.	Eosinophilia.
Asthma	+	+	+	+
Eczema	+	+	+	+
Urticaria	?	?	+	+
Migraine	+	+	+	+
Epilepsy	+	+	+	+
Eclampsia ..	+	+	?	?

Other Metabolic Disorders.

A brief consideration of another series of metabolic disturbances is interesting—namely, beri-beri, sprue, cœliac disease, and rickets. Modern opinion is beginning to associate dietary deficiencies with these diseases—in other words, diets which are lacking in vitamins. Excluding beri-beri they may be considered as intestinal complaints with secondary lesions in other tissues, such as skin, bone, and nerve. Now McCarrison[18] has studied the pathological changes in the intestine resulting from a dietary deficient in accessory food factors, proteins and fat, and containing excess of carbohydrates, and found that there were congestive and atrophic changes in all coats of the bowel, lesions of its neuro-muscular mechanism, impairment of digestive and assimilative processes, and a failure of its protective resources against infection. He suggests that most likely such complaints as mucous disease, cœliac disease, and chronic intestinal stasis may depend in part on a vitaminic deficiency. In a later communication[19] he has correlated this dietetic deficiency with endocrine activity, showing that lack of suitable vitamins has a profound influence on the endocrine glands, all of which—with the exception of the adrenals and pituitary body—undergo greater or lesser degrees of atrophy and depreciation of functional capacity.

Beri-beri.—Simpson[20] has tentatively put forward a hypothesis that "some degree of acidosis may account for the neuritic symptoms, comparing them with the neuritis in diabetes and diphtheria, in which diseases an acidosis can occur."

Sprue.—Castellani[21] has treated cases of sprue with massive doses of sodium bicarbonate, in conjunction with the usual dietetic measures, and obtained satisfactory results in a large number of cases.

Cœliac Disease.—The near relationship between sprue and cœliac disease has been commented upon by Still,[22] but there is no mention of alkalies having been tried as part of the treatment.

Rickets.—One wonders whether, besides some of the accepted causative factors producing this disease, there may not as well be an underlying condition of alkalipenia. All the common ætiological factors of rickets lead to the defective oxidation of the food consumed and to the production of acids. Barr[23] has shown that excessive amounts of acids, whether taken by mouth or generated by the fermentation of carbohydrates in the stomach, would extract the lime salts from the bones, cartilages, fibrous tissues, and nerves. Since the preparation of this paper Hodgson[24] has published some work on this subject in which she deduced that a compensated acidosis was present in active rickets, as demonstrated by a reduction of the alkaline reserve. I had one instructive case of acute rickets, with all the signs, including tetany of both hands and feet. She was given a diet of milk containing sodium bicarbonate and virol, and, in addition, by mouth, a pluri-glandular powder containing parathyroid, thyroid, anterior pituitary, and thymus substances (all favourable for calcium retention), as well as calcium chloride. In three days the sweating and tetany disappeared, and the child was greatly improved. Owing to the multiplicity of remedies used, one cannot single out the specific one, but it displays one's views as to the combined treatment of this obscure and complicated complaint.

In summing up this series of metabolic disorders one arrives at the following conclusions. A diet which is unbalanced, containing a deficiency of suitable proteins, a deficiency of vitamins, and an excess of carbohydrates, leads to changes in the intestinal mucosa in such a way that the resultant stasis leads to constipation and fermentation of the dammed-back carbohydrates; the impoverished epithelium becomes permeable, so that acid products of fermentation and intermediary metabolism lead to a state of auto-intoxication, with a consequent drain on the alkaline resources of the body, and the endocrine glands which control metabolism are also involved so that a vicious circle is set up.

Alkalipenia following Anæsthesia.

There is one important state in which alkalipenia occurs—namely, after anæsthesia. It is important, because if corrected it will prevent the onset of acidosis which may take place, and its correction seems to alleviate and minimise the unpleasant after-effects, chiefly nausea and vomiting. It is accepted now by some authorities that in prolonged general anæsthesia there are two antagonistic factors at work, (1) an "acidotic" factor, (2) an over-ventilation or "alkalotic" factor, but that the former predominates as a rule.

One must go back to consider the problem of respiration in relation to anæsthesia. General anæsthesia, and especially ether, tends to overstimulate the respiratory centre, so that by excessive breathing too much CO_2 is washed out of the circulation, and to maintain the $\frac{H_2CO_3}{NaHCO_3}$ balance in the blood alkali will be withdrawn from the blood or else it would be in excess. This is the "alkalotic" factor. On the other hand, in deep anæsthesia, the metabolism is shut down, and oxidation processes are carried on at a low level; volatile anæsthetics are protoplasmic poisons, and there is later on the absorption of toxins from damaged tissues, and there

is shock with a falling blood pressure. These are "acidotic" factors.

At a recent meeting of the Scottish Society of Anæsthetists[25] it was contended that to secure better after-results, and to prevent complications, that among other things excess in fasting and purgation should be avoided and that alkalies should be given before operation. I had already before this carried out a series of tolerance tests after anæsthesia and found that all the cases were suffering from a degree of alkalipenia. It must be added that completion of the tolerance tests coincided with a marked improvement in the patient's condition. Instead of being lethargic and nauseated they seemed bright and comfortable. (Table V.)

TABLE V.

Case.	Age yrs.	Sod. bicarb.	Grade of alkalipenia.	Anæsthesia.	
				Quantity.	Duration.
		Gr.			Min.
I. W.	11½	660	Marked.	C33½ E315	33
D. M.	13	660	,,	C33 E342	65
A. H.	6	360	,,	C33	25
C. K.	11	240	Moderate.	C31½ E39	25
W. M.	12	240	,,	C33 E319	30
I. G.	8	270	,,	E332	20
A. H.	11	240	,,	C33½	25
L. T.	9	210	,,	C34 E317	15
M. P.	12	210	Mild.	C33 E311	15

As a consequence of these results, large doses of alkalies were supplied before and after operation, and no untoward event occurred, the after-results being excellent in all cases; but at the same time it is realised that the indiscriminate administration of alkalies is not always advisable; to make the latter absolutely safe, elaborate tests to investigate the level of the plasma bicarbonate would have to be carried out.

Conclusions.

The term acidosis should be restricted to those states in which there is almost an exhaustion of the body alkali reserve, as manifested by the onset of hyperpnœa. Owing to the advent of a multitude of synthetic drugs, the treatment in modern medicine is tending to become too symptomatic. It would appear that in bacterial invasion and in certain metabolic disorders there is an underlying state of alkalipenia, and in correcting this by the administration of a substance which should be regarded as a natural constituent of the blood and tissue cells rather than a drug, we are neutralising the acid toxin which is hampering and delaying the full force of the antibody mechanism.

With regard to the two-hourly doses in the tolerance test, that is a matter of opinion, but personally, and especially in acute infections, I am greatly in favour of procuring alkalisation as expeditiously as possible, to prevent the toxins producing a parenchymatous degeneration of those endocrine glands which are so important in the regulation of metabolism and in detoxication.

References.—1. Sellards, A. W.: Principles of Acidosis, 1919, p. 47. 2. Harding, M. Esther: The Circulatory Failure of Diphtheria, 1920, p. 39. 3. Dixon, W. E.: Manual of Pharmacology, p. 349. 4. Means and Barach: Jour. Amer. Med. Assoc., Oct. 15th, 1921. 5. Harding, M. Esther: Op. cit., p. 44. 6. Hirsch: Jour. Amer. Med. Assoc., Oct. 30th, 1920. 7. Douglas: Johns Hopkins Hosp. Bull., November, 1919. 8. Auld, A. G.: Brit. Med. Jour., 1920, i., p. 567. 9. Osler and McCrae: Principles and Practice of Medicine, 1914 (eighth edition), p. 628. 10. Donnelly: New York Med. Jour., 1919, cix. 11. English: Med. Record, Oct. 12th, 1918. 12. Timme: Arch. Neurol. and Psych., June, 1920. 13. Edgeworth, F. H.: Brit. Med. Jour., 1920, ii., p. 780. 14. Shaw, B. H.: Ibid., Jan. 24th, 1920. 15. Lalor and Haddow: Med. Jour. Australia, March 20th, 1920. 16. Clifford White: THE LANCET, 1920, ii., p. 1248. 17. Coke, F.: Brit. Med. Jour., 1921, i., p. 374. 18, 19. McCarrison, R.: Ibid., 1919, ii., p. 37; 1920, ii., p. 237. 20. Simpson, K.: Ibid., 1920, i., p. 735. 21. Castellani, A.: Ibid., 1921, i., p. 338. 22. Still, G. F.: Common Disorders and Diseases of Childhood, p. 238. 23. Barr, Sir James: Discussion on Vitamins, B.M.A. Meeting, Cambridge, 1920. 24. Hodgson, A.: THE LANCET, 1921, ii., p. 945. 25. Meeting of Scottish Society of Anæsthetists, Brit. Med. Jour., 1921, i., p. 194.

PERNICIOUS ANÆMIA, GASTRIC ACHYLIA, AND ENTERITIS:

TREATMENT BY INTRODUCTION OF HYDROCHLORIC ACID INTO THE STOMACH.

BY VALDEMAR BIE,

PROFESSOR OF EPIDEMIOLOGY IN THE UNIVERSITY OF COPENHAGEN; PHYSICIAN TO THE BLEGDAM HOSPITAL.

THE method of treatment described below can hardly fail to recall the treatment of pernicious anæmia with kephir, first tried under the direction of Prof. Knud Faber. Kemp and others have assumed that the action of this treatment depends on displacement by kephir organism of harmful organisms thriving in the small gut on account of insufficiency of HCl, the toxins of these organisms giving rise to the anæmia. Nothing can be said with certainty regarding this power of displacement; it might just as well be the lactic acid of the kephir which brings about this effect by replacing the normal HCl of the stomach. Even were this the case, I think the treatment here described should be preferred, as it permits HCl to be given in larger doses and exactly regulated.

In the spring of 1918 I treated one of my colleagues, whose history was as follows:—

History.—A. G., doctor, aged 34. Admitted April 20th, 1918, discharged June 28th following. No special morbid diathesis. As a child, patient had pleurisy twice and the usual children's diseases, otherwise good health until 1902 or 1903, when he was 18 or 19 years old; symptoms of stomach and intestinal trouble then appeared—pressure in the epigastrium, eructations, and alternating constipation and diarrhœa—which got worse. In 1904 or 1905 he consulted Prof. Faber, who diagnosed gastric achylia and regulated the diet. Since dieting did not relieve him, patient gradually gave it up. His condition during these years has remained almost stationary; motions never normal for more than a few days, sometimes lumpy and solid, sometimes 1 to 5 thin stools daily. Motions always have a bad odour, and in periods of diarrhœa are very foul. Much obnoxious flatus. Blood never passed in the motions; now and again a little pain in the stomach, frequently pressure in the epigastrium, and nasty tasting eructations. Appetite always good; frequent headache.

In December, 1917, came a sudden change for the worse—vomiting, next day diarrhœa and nausea, the last treated successfully with pepsin and hydrochloric acid. In the autumn of 1917 decided and progressive anæmic symptoms made their appearance; he became tired very easily, suffered from palpitation, headache, dizziness, and was very short of breath on the least exertion. The hæmoglobin in the autumn of 1917 (estimated with Sahli's hæmoglobinometer, correction unknown) was 60 per cent., a couple of months later the same, and shortly before admission 35 per cent. From the beginning of November, 1917, for a couple of months he took, first, pills containing arsenious acid, quinine sulphate, and ferrous lactate, and then albumin-maltose and iron, with no good result. Latterly he was treated by injections of sodium cacodylate, 1 c.cm. (=0·05 g. sodium cacodylate) daily for 15 successive days, the last injection a few days before admission. Recently occurred frequent attacks—some lasting five minutes—of acute pain of short duration in the right iliac fossa radiating out into the thighs and rectum.

Condition on Examination.—(April 20th, 1918.) Patient heavily built, well nourished, very pale, skin markedly jaundiced; pulse 108, regular and soft; lungs normal. Heart: apex beat and dullness normal; heart sounds very weak; at apex, over pulmonary area and over vessels of neck, a slight systolic murmur heard; marked pulsation in vessels of neck. Liver reaches to costal margin; spleen not palpable—spleen dullness reaches to 2 inches behind costo-clavicular line. Abdomen normal; no œdema; urine acid, clear, contains no albumin or sugar.

Blood examination: hæmoglobin (Sahli) 44 per cent. (corrected,[1] about 53 per cent.). Red blood cells, 2,400,000. White cells, 8750. Hæmoglobin index, 1·1. In a blood film stained with Giemsa's dye on April 21st a single normoblast and some anisocytosis found, but nothing else abnormal. On May 5th a stained film showed blood normal.

Examination of the digestive organs gave the following results.

[1] In determining the correction coefficient it is assumed that 100 c.cm. normal human blood can bind 18·5 c.cm. oxygen by means of its hæmoglobin. The estimation was kindly undertaken by a physiological colleague, Mrs. Krogh.

April 4th: Ewald's test-meal, three-quarters of an hour: 17 c.cm. of badly digested slimy stomach contents removed. Congo red, 0; phenolphthalein, 6. Examination of stools for blood gave four negative results with benzidin; one positive with benzidin and Weber-Schroeder's method 1, 2 and 3. Reaction for pus in fæces negative each time it was tested. Mucus in fæces was examined for twice; one positive and one negative result. Ascaris eggs demonstrated twice; eggs of *Trichocephalus dispar* not found. With proctoscope (24 cm.) nothing abnormal found except that mucous membrane was anæmic but not bleeding. X ray examination performed on May 3rd: stomach lying high up; just beneath lung a part full of barium meal, followed by an empty part, and then the actual full stomach; junction with the duodenum is not seen—apparent discontinuity between pylorus and duodenum. Ten minutes later pyloric portion observed strongly contracted, and part lying behind much dilated. On May 4th stomach empty; whole of barium meal distributed over complete length of colon. Wassermann reaction was negative. During first week in hospital temperature was slightly elevated.

The patient had for many years suffered from gastric achylia with severe secondary enteritis. In the autumn of 1917 anæmia of moderate intensity was discovered, which got worse concurrently with aggravation of the enteritis in December, 1917. Marked subjective anæmic symptoms appeared in the winter of 1918, and the anæmia was very considerable when an investigation of the hæmoglobin was made in the ensuing spring. The whole character of the anæmia, particularly the increased hæmoglobin index and the jaundice, favoured the pernicious type.

In accordance with Faber's investigations, the enteritis must be regarded as a consequence of gastric achylia, and the anæmia as caused by absorption of toxins from the intestines. No other reason for the anæmia could be demonstrated. Apart from the presence of ascaris eggs, there was nothing else abnormal. After a course of santonin no more ascarides were passed.

Treatment.

It is clear that restoration of normal conditions in the stomach and upper part of the small intestine was necessary. To get rid of the abnormal presence of bacteria in the intestine, I introduced once a day, on an empty stomach, by a thin sound, 6 mm. in diameter, a hydrochloric acid dilution of about the same strength and volume as the acid secreted after a meal. This periodic production of an acid reaction in the upper part of the small gut might be expected to hinder, or to diminish, pathological decomposition of the intestinal contents.

It is known that the stomach secretes a 0·4–0·5 per cent. solution of HCl, corresponding to a dilution of Danish official acid in the proportion of 1 : 62·5 or 1 : 50. The volume of fluid secreted by the stomach to digest a meal depends on the size and nature of the latter. I found that half a litre of HCl solution might be employed without harm. I began on April 22nd cautiously to introduce 1 c.cm. of official acid (containing 25 per cent. HCl) diluted with 250 c.cm. water. On the 23rd, 2 : 500 was given; on the 24th, 3 : 500; on the 25th, 5 : 500; on the 26th, 6 : 500; and on the 27th, 7 : 500. As the patient felt very full, and had to lie quiet to avoid vomiting, 8 c.cm. official acid in 400 c.cm. water was given on the 28th and following days; 6 : 300 from May 1st, and 5 : 250 (=0·5 per cent. solution HCl) from May 5th. From May 31st till June 2nd the acidity was gradually increased to 8 : 250; from June 5th it was again reduced; in the latter part of his stay in hospital the patient took 3 : 250; after the discharge he reduced the dose to 3 : 150 (=0·5 per cent. solution of HCl). This dose caused no discomfort. He continued to take it till November.

Course of the Enteritis.

Immediately after admission a boiled purée diet was ordered in addition to the administration of HCl. The effect of HCl on the intestinal disease was powerful and rapid—diarrhœa ceased immediately, and constipation set in. On April 24th a glycerine injection was necessary. On the 28th stewed purée diet was ordered, together with cheese, ox tongue, and sardines; patient was taken out into the fresh air. On May 5th a full diet was ordered, excepting milky food, cabbage, onions, and pork. The appetite, at first poor, became excellent at the beginning of May, the lassitude disappeared; on the 16th the patient got up, and on the 23rd he was allowed to walk, and in June he was able to play tennis.

Regulation of the bowels gave great trouble during the whole of his stay in hospital. Only occasionally was there a normal spontaneous motion; obstinate constipation was the rule. Numerous aperients and enemata, and also massage were tried, with quite irregular effect. Motions were usually soft, sometimes mixed with lumps; if a day passed without a motion, the patient developed headache, nausea, coated tongue, and became exhausted. Some days he had a little pain in the stomach. The motions, although foul, were much less so than before treatment. During his stay in hospital the patient only had diarrhœa once, from June 15th to 23rd. It was treated with purée diet and tannalbin. On June 28th he left hospital.

Course of the Anæmia.

With regard to the effect of treatment on the blood, it did not at first seem that the condition of the blood would improve following the improvement in the intestinal condition—which took place, literally speaking, the same day the treatment with HCl was begun. The steady increase of anæmia during the half year before admission was continued, the hæmoglobin decreasing from April 20th to May 4th from 53 to 44 per cent., while the red corpuscles remained about the same in number (2·4–2·3 million). From the middle of May both the amount of hæmoglobin and the number of red corpuscles began to rise, and after, roughly, a couple of months' treatment both were normal again. June 25th the patient had 102 per cent. hæmoglobin (corrected) and 5·08 million red blood corpuscles (index=1·0). At first the hæmoglobin increased the more quickly, and the index rose to 1·4 (May 29th, 90 per cent. hæmoglobin, 3·1 million red blood corpuscles.) In contrast with what usually happens in anæmias which owe their origin to gastric achylia and enteritis, the index was high the whole time, indicating that the condition must be classed as pernicious anæmia.

That this happy result, both as regards the enteritis and the anæmia, is due to the treatment with HCl there can be no doubt. Only with the aid of large doses of HCl was it possible to cope with the intestinal fermentation. In view of the slight increase of anæmia after admission to hospital I tried the effect of iron, and prescribed (on May 5th, 15 days after admission) 10 c.cm. of ferraton[1] three times daily. On the 12th I increased the dose to 15 c.cm. three times daily; as the anæmia began to decrease I stopped ferraton on the 22nd, after 17 days. Two facts militate against attributing cure of the anæmia to this preparation—first, in the half year previous to admission patient was treated with ferrous lactate, albumin-maltose and iron, as well as with arsenic by the mouth and subcutaneously; second, improvement was very slight when ferraton was discontinued and thereafter increased for a couple of months until the blood was normal. I think, therefore, I am justified in attributing the patient's cure entirely to treatment with HCl in such large doses that it practically took the place of normal secretion.

History of Case after Leaving Hospital.

After leaving hospital on June 28th, 1918, the patient went to a seaside resort until August, and then returned to his practice in the country. His general condition was excellent, he had no dyspepsia; he had a spontaneous movement of the bowels daily. His satisfactory condition was only interrupted once when he awoke one night with nausea and diarrhœa. During the first three weeks after he returned home he attempted to leave off the HCl, but thin foul-smelling motions again appeared. When he returned to the administration of HCl his motions soon became normal again. In the beginning of November he stopped the HCl treatment in consequence of great pressure of work; he has not taken HCl or any other

[1] An organic preparation of iron containing 0·5 per cent. Fe.

treatment since, nor has he dieted himself, but has remained quite well. He feels a heaviness in the epigastrium when he partakes of fat or salt food; there is sometimes a sensation of distension of the abdomen, pain and irregular action of the bowels, but no diarrhœa. The general condition is good, except that a certain amount of fatigue and headache arises in connexion with the dyspeptic attacks.

The most interesting problem was whether the anæmia was definitely cured, as well as the enteritis which must be looked upon as the cause of its appearance, or whether there would be a relapse, which might be expected in view of its pernicious character. The pronounced subjective symptoms of anæmia, observed previous to hospital treatment and dissipated by it, have clearly never returned. My examination of his blood on Jan. 26th, 1921, showed it was normal: hæmoglobin 98 per cent. (Sahli, corrected); red blood corpuscles 5·12 million; hæmoglobin index, 0·96; leucocytes, 9300; microscopically, nothing abnormal. In January, 1922, he has reported to me that his condition is quite satisfactory, and his hæmoglobin normal. As the period of observation has now been extended to three and a half years, it is justifiable also to regard the anæmia as definitely cured.

A CASE OF
BILATERAL RETRO-OCULAR NEURITIS.

By H. W. ARCHER-HALL, D.O. Oxf.,
ASSISTANT SURGEON, BIRMINGHAM AND MIDLAND EYE HOSPITAL.
With Dental Notes by Harold Round, M.D.S.,
DENTAL SURGEON, QUEEN'S HOSPITAL, BIRMINGHAM.

THE following case affords a striking example of the evil effects of dental sepsis.

Ophthalmic Condition.

On June 6th, 1921, Mrs. X., aged 22, sent by Dr. Percy Smith of Edgbaston, consulted me, complaining of loss of vision of the right eye during the last six days. She also complained of headache.

On examination I found visual acuity in the affected eye reduced to perception of light. With left eye she saw 6/12. With ophthalmoscope: very slight optic neuritis, not enough to account for the blindness. The blindness seemed due to an inflammation of the optic nerve posterior to the eye, but extending forwards so that slight inflammation could be discerned with the ophthalmoscope at the optic disc, and apparently due to a toxæmia arising from some septic focus, but there was no evidence of sepsis in the accessory nasal sinuses or elsewhere.

At that date I had cured two patients of unilateral blindness from retro-ocular neuritis by having one or two obviously carious teeth removed, thinking them probably the seat of abscess; in each case my surmise had proved correct, for apical abscesses were found when the teeth were extracted. Acting again in this previously lucky but somewhat haphazard manner, I advised extraction of what appeared to be the only carious tooth she had.

On June 13th I saw the patient again; she had had the tooth cleanly removed, without any effect upon the septic focus, for the patient was now blind in both eyes and had to be led by her mother. On that day I had the teeth radiographed by Dr. Harold Black, and on June 15th I took patient and films to Mr. Harold Round, whose notes on the dental condition follow. I saw the patient again on the following day, and although only 24 hours had elapsed since the extractions, she said she felt better; vision amounted to the counting of fingers at one metre. Four days later she could see the illuminated card bearing the test types at six metres, and on the 23rd, eight days after removal of the three teeth, she saw the large top letter 6/60. With each succeeding week she read a further line of the test types, until on July 21st she attained full fields of vision and perfect visual acuity, 6/6 with each eye.

Condition and Treatment of the Teeth, by Mr. Round.

Mr. Archer-Hall asked me to see Mrs. X. on June 15th. She was then so blind that it was impossible for her to get about alone. On casual inspection I found her mouth, generally speaking, both clean and well cared for; there seemed at first very little chance of finding anything orally to account for her condition.

Radiographs taken by Dr. Harold Black suggested definite evidence of apical trouble at the root of the upper left first bicuspid. There was a shadow at the apex of this tooth suggesting rarefaction, and the crown of the tooth was carious. The upper right first molar had recently been extracted. On clinical examination the radiographic evidence was confirmed, the upper left first bicuspid was found to be carious, very tender on palpation, and on tapping the tooth, an apical impulse could be distinctly felt; the pulp was found to be dead. Two other teeth very tender, and somewhat loose on palpation, were the upper left second bicuspid and the lower right first molar; on radiographic evidence the latter appeared normal, but the apex of the former suggested a very slight area of rarefaction and some evidence of apical absorption. There was a slight amount of gingivitis in the area of the lower incisors, due to a small deposit of tartar, and the radiograph showed some alveolar absorption as a result of this. It was thought advisable to extract the two upper left bicuspids and the lower right first molar, and this was done under nitrous oxide. The lower incisors were scaled and the gingivitis soon cleared up. Examination of the teeth after extraction entirely supported radiographic and clinical evidence; there was some absorption of all apices, except in the case of the anterior root of the lower right molar which appeared to be normal.

x x

x

Radiographs by Dr. Harold Black, showing the affected teeth. x = Apical abscesses.

SUCCESSFUL PROSTATECTOMY AT NINETY YEARS.

BY JAMES B. MACALPINE, F.R.C.S. ENG.,
SURGEON AND SURGEON IN CHARGE OF THE GENITO-URINARY DEPARTMENT, SALFORD ROYAL HOSPITAL.

THE reason for reporting the present case is that it demonstrates that in suitable cases prostatectomy may be successfully performed even in extreme old age.

On March 10th, 1921, I was asked by Dr. C. H. Ferguson, of Eccles, to see with him in consultation J. H., a male, aged 90 years and 10 months, suffering from prostatic retention.

History.—There had been some slight difficulty in micturition for an indefinite period, together with insignificant nocturnal frequency. On March 7th, 1921, an attack of retention had to be relieved by the catheter, which again had to be passed on three occasions during the next two days; its introduction was particularly painful and difficult, the angle in the prostatic urethra appeared to be very acute.

Examination.—Patient was thin, wiry, very active, and of good intelligence. Temp. 98·6° F., pulse 68, of good quality, low tension, and regular, though with an occasional intermission; cardiac sounds normal, lungs healthy. Complexion fresh, appetite good, though he was fastidious as regards his diet. Tongue moist, though somewhat coated; no headache or vomiting; bowels acted regularly; urine had a specific gravity of 1012, was acid in reaction, contained a fair trace of albumin, and was free from pus and sugar. He suffered from bilateral senile cataract in an advanced stage.

Abdomen.—Examination showed a thin wall of good muscular development considering the patient's age. The bladder formed an obvious swelling in the hypogastrium: palpation of the renal angles revealed no tenderness or increase in size of the kidney. Rectal examination showed a prostate of medium size and soft consistency.

Patient was removed to a nursing home; on his arrival a catheter was introduced and in the first 24 hours 92 oz. of urine were slowly drained away. After this the average secretion of urine fell to about 30 oz. in the 24 hours. When the catheter was removed he was quite unable to urinate naturally. He was under observation until March 18th, and remained comfortable, with normal temperature and pulse and reasonable appetite. The coating of the tongue disappeared. On the 18th an attempt to re-insert the catheter failed completely, in spite of considerable perseverance, and the use of a varied selection of instruments. As the bladder was distended I was faced with the necessity of making a decision as to the best method of emptying it in this particular patient. The desirability of operation had to be considered and the advisability of leaving a permanent suprapubic drainage was explained and discussed, but the patient and his relatives were strongly opposed to it, and more than willing to face the added risk of a prostatectomy.

Operation.—Anæsthesia was induced by Mr. J. Ghosh, and as speed was desirable, the bladder was quickly opened, a prostate of medium size easily enucleated and the bladder closed around my special suprapubic drainage-tube. (The total length of absence of the patient from his bed, including transit, anæsthesia, and operation, was 16 minutes.) Bleeding was very slight, and shock practically absent. The evening temperature was 97·6°, the pulse 60, and the following morning 99·4° and 100 respectively. After that convalescence was uninterrupted. For the first 12 days the average urinary output was 25 oz.; after that there was oliguria, only 60 oz. altogether being passed in five days, but the patient showed no symptoms of the retention of urinary products. At the end of this time recovery set in; by the end of the fourth week the output was 28 oz. per diem. The small quantity of fluid passed during this period may in part be explained by the very small stature of the patient, and in part by a belief on his part that to take fluids was injurious to him—a belief very difficult to dislodge, and apparently a survival from the days when he suffered from retention. It was, of course, partly due also to diminished renal function. Urine was passed naturally on the fortieth day, and the patient left the home a few days later.

In June he wrote to me from North Wales: "I am progressing wonderfully, even so as to satisfy you. I think I shall take refuge with my daughter in California." In November he unfortunately contracted influenza, to which he succumbed after a few days' illness, there being no urinary trouble.

Remarks.

I have not been able to find in the literature a record of a prostatectomy at so advanced an age. Freyer's series of 1550 cases is usually referred to as being remarkable for containing many particularly aged patients; the greatest age in this series is a patient "in his ninetieth year."[1] Sir J. Thomson Walker in 1914 reported the maximum age in his series at 86. Legueu refers to the results obtained by Freyer, even in cases of extreme old age, which suggests that he has not himself performed operations on such aged patients.

Excessive age is naturally usually regarded as a contra-indication to prostatectomy. Tenney and Chase collected details regarding 816 cases of prostatectomy which had a fatal issue, and prepared a table indicating relationship of age to mortality, showing an increasing percentage of deaths with increasing age.

Age in years.	Percentage of deaths.
50–59	5·8
60–69	9·5
70–79	15·0-33
80 and over	50

In contrast with this statement, however, is one by Thomson Walker:—

"Old age does not itself contra-indicate prostatectomy. The mortality does not increase *pari passu* with the age. In 83 cases the death-rate was greater between the ages of 55 and 60 than between 66 and 70, or over 75. . . . The feeble resistance of . . . . aged patients must, however, be borne in mind . . . ." &c.

In this particular case I would willingly have shirked the responsibility had an alternative method presented itself. However, the result justified the measures employed. My patient was well-preserved, his cardio-vascular and renal systems were good; these facts, together with a high speed in operating, achieved the happy result.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF MULTIPLE CONGENITAL DEFECT.

BY KENNETH M. PURVES, M.B., CH.B. EDIN.,
ASSISTANT MEDICAL OFFICER, BAGTHORPE INFIRMARY, NOTTINGHAM.

THE subject of these notes was a full-term male infant born in the Lock ward of the Bagthorpe Infirmary, Nottingham. The mother was a feeble-minded single woman aged 20, admitted early in pregnancy with primary and secondary syphilitic manifestations which rapidly cleared up under treatment, the Wassermann being negative for three months before confinement. The father was an elderly gipsy.

The child showed no evidence of active syphilis and its blood test was negative. At birth it was found that the anus was absent, being represented by a slight pigmented dimple; within a few hours signs of pressure became manifest—viz., bulging of perineum when the child cried, œdema of the scrotum and groins, prominence of the mesial scrotal vein, and general cyanosis. An incision was made through the anal dimple, the rectum brought down and opened, and when the meconium had escaped the mucous edges were united to the skin edges. The pressure symptoms rapidly disappeared, the wound healed by first intention, and the artificial anus functioned satisfactorily.

The cyanosis, however, persisted, and although the child sucked well, cried lustily, and gained weight the cyanosis, together with the weakness of the pulse, faintness of the heart sounds, and shallowness and rapidity of respiration raised the suspicion of congenital heart disease, though no confirmatory evidence was forthcoming.

At the end of about three weeks the child ceased to thrive, would not suck, and became very lethargic. The cyanosis increased, there was marked œdema of the arms and legs, the temp. sank to 95°F., and a large swelling was observed in the epigastrium. Death took place on the twenty-fourth day.

[1] THE LANCET, 1913, i., 1018.

Post Mortem.—The following defects were found:—

1. Absence of the anus as described above.

2. Complete transposition of viscera; the thoracic and abdominal contents were a mirror image of the normal arrangement. The heart lay in the right side of the thorax and its left auricle and ventricle corresponded to the normal right and vice-versa. The aorta ascended to the second left costal cartilage and then arched backwards and to the right. The innominate artery was on the left and the right common carotid and subclavian arteries arose separately from the aorta. The right lung had two lobes and the left three. The stomach lay under the right vault of the diaphragm with the pylorus crossing the vertebral column, on the left of which lay the duodenum. The normal positions of the liver and spleen were reversed, the pancreas crossed from right to left, and the mesentery extended from the right side of the vertebral column downwards and to the left. The cæcum and appendix occupied the left iliac fossa and the sigmoid colon the right.

3. Persistence of the foramen ovale, which allowed the passage of a closed Spencer-Wells forceps from one auricle to the other. No other defects in the normal structure of the heart were found. The closing membrane of the foramen ovale appeared to be absent or very defective.

4. Great dilatation of the stomach causing the epigastric tumour observed before death. The pyloric sphincter was hypertrophied, this being apparently the cause of the dilatation. The lower end of the œsophagus shared in the dilatation. The child only vomited once shortly before death.

The lungs appeared to be fairly well expanded, but were congested and showed scattered patches of consolidation, chiefly in the upper lobes. This bronchopneumonia must have been largely due to the cardiac defect, as the child had received particularly good nursing and care from birth.

HÆMANGIOMA OF LARYNX.

BY J. B. CAVENAGH, M.B., CH.B. OXF.

THE following case illustrates the importance of a thorough examination of the larynx in any case of prolonged hoarseness.

The patient, a married man of 32, with good family history and sound general health, began to complain of hoarseness and cough in 1916. He was treated by his doctor for these symptoms, but in spite of all efforts the hoarseness persisted. In May, 1921, the condition was pronounced tuberculous, as the result of which the patient was sent to a sanatorium, where he remained for several months; but on no occasion was the medical officer in charge able to discover any evidence of tuberculosis, either in the lungs, larynx, or sputum.

At the end of October, 1921, the patient was sent to me for an opinion. The man looked ill, had lost some weight, and was worried and depressed about the diagnosis; the voice was gruff and harsh, with momentary periods of aphonia. Examination with a mirror showed signs of mild chronic laryngitis, and, situated over the anterior commissure a pedunculated growth the size of a small bean, which prevented proper approximation of the cords on phonation.

Operative treatment was naturally recommended, and on Dec. 2nd, under general anæsthesia, I removed the growth by the direct method. On microscopical examination it proved to be a hæmangioma. The patient was kept on silence for two weeks; three weeks later finds him with a good clear voice and fit in every respect.

One cannot help thinking what time and trouble might have been saved, for all those concerned, had the larynx been carefully examined at a very much earlier date.

BIRMINGHAM EYE HOSPITAL.—At the annual meeting held on March 16th the report stated that the ordinary expenditure was £14,134 11*s.* 7*d.*, or £818 less than the previous year. The ordinary income was £12,875, being £298 more than last year. There was a reduction in the receipts from annual subscribers. The number of patients admitted to the public wards was 1539, the average length of stay being 15·9 days, as compared with 14·9 days in 1920. In the private wards 95 patients were treated. In the out-patient department there were 69,100 attendances, the average daily attendance being 225. Of the 69,100 the casualties numbered 16,007. Operations in the in-patient department were 1012 and in the out-patient department 659. Chief among these were 309 for cataract, 87 for glaucoma, 137 for strabismus, 58 for removal of foreign bodies by the electromagnet, and 106 for removal of the eye.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY: SUBSECTION OF PROCTOLOGY.

THE AFTER-RESULTS OF COLECTOMY.

A MEETING of this subsection of the Royal Society of Medicine was held on March 22nd, with Sir C. GORDON-WATSON, the President, in the chair, when Mr. E. R. FLINT opened a discussion on the After-Results of Colectomy (partial and complete) performed for Colon Stasis.

Colectomy only Successful in Selected Cases.

Mr. Flint distributed circulars embodying the results of operation at Sir Berkeley Moynihan's clinic at Leeds up to the end of 1920, the contents of which may be summarised as follows:—

Sixty-eight cases were operated upon: (1) In 60 cases primary hemicolectomy was performed, with a mortality of two (one from shock and one from pulmonary embolism); (2) in eight cases ileosigmoidostomy was performed, with no deaths. Of Group 1 37 cases had been traced: In 15 of these the result was "good" or "very good." There had been a gain in weight of from 1½ to 4 st.; there was no indigestion or flatulence, the bowels acted normally, and the patients were able to lead normal lives. In all these cases the cæcum at operation was full, blue, "soggy," dependent, and obstructed mechanically. (This form of cæcum was seen in 20 cases in all.) In 16 the result was fair. The general health was improved, but there were occasional attacks of heartburn and indigestion. None of these patients had been restored to full good health. In six the result was "poor." These patients were still ailing, thin, miserable, and unfit. All were believed to be examples of "deficiency disease." Of Group 2 six cases were traced: In two the result was "good," in two the result was "fair" or only "slightly improved," and in two the result was "poor." In a large proportion of both groups of cases there had been previous operations, such as appendicectomy, nephropexy, and various pelvic operations—oöphorectomy, ventrifixation, &c.—without benefit.

Mr. Flint said that the object of his paper was to show that colectomy was only successful for a few selected cases of intestinal stasis, which was not now regarded as a disease in itself but rather as a part of a general nutritional disorder. Metchnikoff and Sir Arbuthnot Lane held the view that the colon was a degenerate, useless, and often harmful structure in man. But Sir Arthur Keith had pointed out that its total glandular structure exceeded that of the pancreas and its total muscle tissue exceeded the biceps of a blacksmith; and he (Mr. Flint) added that its vascular supply was lavish, from which it would hardly appear to be a degenerate organ. One of the important functions of the colon was the absorption of fluid, and after colectomy this function was taken over probably by the terminal ileum, with the result that the fæces were inspissated as before, since the body must have fluid, and stasis returned. The result of colectomy would therefore appear to be that the trouble was shifted further back. To be justifiable, the operation for removal of an important organ such as the colon should result in a high proportion of cures—and that high proportion was not attained in the cases he was discussing. The best results were obtained when there was chronic mechanical interference by constricting bands across the ascending colon usually in the neighbourhood of the hepatic flexure, and microscopic examination revealed an alteration of the neuromuscular mechanism sufficient to account for the absence of propelling power of the gut. The colon and cæcum in these cases were thick, "soggy," voluminous, and full of pultaceous fæcal material. In the less successful cases or failures this condition was rarely seen; in these cases change had probably occurred in other organs such as the liver.

Is Stasis a Deficiency Disease?

Mr. Flint said that Sir Berkeley Moynihan attributed his failures to the fact that the colon was only one of

the diseased organs—the whole condition being probably a "deficiency disease." McCarrison had, in fact, produced experimentally similar changes in the colon to those seen by Sir Arthur Keith in many of the excised colons; and cases of intestinal stasis presenting symptoms and verified by X rays had occurred in deficiently fed prisoners of war. Other evidence pointed in the same direction, but more work was required. It was obvious that if as the result of a long-standing deficiency disease changes had occurred in other organs little could be hoped from colectomy, although the operation might be useful in a few cases where the changes already described occurred in the proximal colon only. The latter type might, he thought, be recognised by certain symptoms and signs such as the marked wasting, anæmia, septic skin conditions, fœtid breath, &c., together with X ray demonstration of stasis of from 48 to 96 hours in the cæcum and ascending colon—the progress of the meal from there onwards continuing at the normal rate. Where the stasis occurred lower down in the bowel colectomy was never indicated. He gave two examples of cases of marked stasis with distension of the whole large gut due to spasm of the anal sphincter from painful fissure; both these cases were cured by stretching the sphincter. Perhaps the strongest argument against colectomy was that it was gradually being abandoned in favour of colopexy. Incidentally, Mr. Flint thought that the fashion for colopexy would also pass, since there could be little sound surgical sense in fixing an organ which was ordinarily a mobile one. The operation upon which these remarks were founded was always that of hemicolectomy; the last 4 to 6 inches of the ileum, together with the cæcum, ascending colon, and proximal half of the transverse colon were removed, the cut ends closed, and a lateral iso-peristaltic anastomosis performed. The anastomosis was wrapped in omentum, which had first been separated from the portion of transverse colon removed. The immediate results as regards the action of the bowels varied from rather loose motions to constipation. The ultimate result in the unfavourable cases was a return to obstinate constipation. No case of prolonged and uncontrollable diarrhœa occurred.

Complete colectomy was rarely practised at Leeds, except as a secondary operation after ileo-sigmoidostomy, since they held that the main disease occurred on the right side, and since the results of total colectomy were no better than those of hemicolectomy. Indeed, after total colectomy, which had a higher mortality, there was often inveterate diarrhœa. For sufferers from this, as Lord Dawson had pointed out, very little could be done.

Morbid Anatomy of Stasis.

Sir ARTHUR KEITH said that his contribution to the discussion would take the form of a description of colons removed by operation by Sir Berkeley Moynihan and other surgeons. But first he protested against Sir Berkeley Moynihan's exhibition of his results. A fuller description of what was achieved by operation was necessary than mere tabulation of results as "good," "fair," or "bad." Twenty years ago Metchnikoff concluded that the great bowel in man was a vestigial organ of no value in the human economy and indeed actually harmful. Such an opinion was, however, no longer tenable, and it was now almost universally acknowledged that the normal colon was a useful organ with a definite part to play in intestinal digestion. But individuals with diseased colons would often be "better off" without them.

Of 15 colons sent him by Moynihan 11 were of the type described by that surgeon as "soggy"; he (the speaker) considered that "total colitis" better described the condition, since all the coats of the bowel, serous, muscular, and mucous, exhibited changes of an inflammatory nature. This inflammation was most intense in the submucosa, which he described as the laboratory of the bowel where the changes necessary for assimilation took place. The muscular coat had become fibrous. It was obvious that these colons were no longer useful organs. The remaining four of Moynihan's colons and a number sent by other surgeons exhibited less marked inflammatory changes, but were remarkable in showing a number of large cells filled with brown pigment (a melanin allied to adrenalin) in the region of the apices of Lieberkühn's follicles. This was the type of colon produced experimentally by McCarrison. He had also had an opportunity of examining a large bowel which had been excised after having been "short-circuited" by an ileo-sigmoidostomy for ten years. In spite of an intense fibrosis the coats of the bowel were still recognisable, the ileo-cæcal sphincter still possessed tone and the glands showed little change, which went to show that nature was still using the large bowel in spite of the "short-circuit." After colectomy he had observed marked changes in the small intestine, which in one case had shrunk to 7½ ft. in length from the normal of 22½ ft. with a corresponding increase in the diameter and hypertrophy of its coats, so that it came to resemble the normal large intestine. He appealed for more specimens and also inquired what happened to the cases of "total colitis" which were not submitted to operation.

The Case for Non-Surgical Means.

Dr. ARTHUR F. HURST said that he hoped the day was not far distant when no operation would be performed on the colon in the absence of a demonstrable lesion of that organ. Although he could not agree with many of the conclusions of Sir Arbuthnot Lane, he felt indebted to him for his demonstration that intestinal toxæmia was an important factor in the production of many diseases of obscure origin. Dr. Hurst, however, felt sure that in the vast majority of cases medical treatment only was required, and that colectomy was rarely indicated for intestinal stasis in the absence of gross organic disease. He had seen the after-results in only two cases. The first patient was a lady aged 40 years. Medical treatment had failed to give relief, and in February, 1920, at the request of Dr. Hurst, Sir Arbuthnot Lane had removed a mobile cæcum, ascending colon, and part of the transverse colon. The excised colon showed the pigmentary changes described by Sir Arthur Keith. The patient slowly improved, but she was still (two years after the operation) constipated, though much better and glad the operation had been performed.

The second patient consulted Dr. Hurst some years after the operations had been done. The patient, a male aged 54 years, had had six abdominal operations, including a gastro-enterostomy, an ileo-sigmoidostomy, the removal of 4 inches of small intestine, together with the ascending colon and half the transverse colon, and a pylorectomy. In spite of this he was in good health, and his chief complaint was that he became tired towards the end of his second round of golf. He was disappointed to find that medical treatment could not do for his golf what six operations had already failed to accomplish. Dr. Hurst felt that the success of partial colectomy in the first case was sufficient to encourage him to advise it again in preference to the various colopexies, if a similar case came under his care; but he thought that most patients did sufficiently well with medical treatment.

Dr. Hurst had seen a number of the after-results of total colectomy and had obtained statistics of the Guy's Hospital cases since 1914, together with other figures published by Bainbridge of New York. These showed a total mortality of 16·5 per cent., and also that the operation was now much less frequently performed for intestinal stasis than formerly. Sir Arthur Keith had asked what became of the cases not operated on. He, Dr. Hurst, could only say that they did not die. With the exception of one case recorded by Lockhart-Mummery, death from intestinal stasis had never been reported. The colon, as was shown during the recovery from dysentery, possessed extraordinary powers of recuperation. He therefore thought that the operation of complete colectomy, with its high mortality, could hardly ever be warranted for intestinal stasis. Psychotherapy, careful dieting, exercise, massage, intestinal lavage, and perhaps bacteriology should each play

a part in the treatment before surgery was considered. Even when these failed ileo-sigmoidostomy, as had been performed by Sir Arbuthnot Lane on one of his patients with complete relief, was usually sufficient. Further, the published results of total colectomy showed that quite a number of patients were not cured, and numerous cases had been readmitted to Guy's Hospital for complications such as adhesions. Medical treatment of these patients was most unsatisfactory and in only one case had improvement taken place as a result of treatment with sour milk.

The ileo-cæcal sphincter was as necessary for intestinal digestion as the pylorus for gastric digestion. The cæcum and ascending colon also had definite functions in the absorption of water, so that, whether the whole colon or only the proximal part together with the ileo-cæcal sphincter were removed, intestinal digestion was severely disturbed; further, the removal of the sphincter permitted bacterial invasion of the small intestine with resulting fermentation and putrefaction in the lower ileum. It was easy to see why the benefits of total colectomy were transitory. A disadvantage of colectomy was the abolition of the normal reflex for defæcation which resulted from peristalsis in the colon, at regular intervals, usually only three or four times a day. After colectomy the bowels acted with considerable irregularity, frequent fluid stools being the usual result. In the treatment of this intractable diarrhœa, he had discovered that even small doses of morphia made the patient dangerously ill, probably owing to the fact that the colon was normally the chief channel for excretion of this drug.

He concluded by saying that the majority of cases of intestinal stasis did well if treated with sufficient perseverance by non-surgical means, and that the high mortality, the danger of complications, and the uncertainty of lasting relief made it doubtful whether colectomy should ever be performed in the absence of gross organic disease of the colon.

The French View.

Dr. VICTOR PAUCHET'S (Paris) paper was read by Mr. H. GRÆME ANDERSON. He said that total colectomy, which might be termed "Arbuthnot Lane's operation," was warmly advocated by some and strongly opposed by others. The opponents of the operation maintained that it was a serious operation with a high mortality and that the remote results were not uniform, some patients suffering from diarrhœa, others from constipation, and others from a persistence of pre-operative symptoms, such as neuralgia, asthenia, indigestion, menstrual irregularities, &c. The favourable results were very striking, there being a disappearance of the constipation, headache, dyspepsia, and asthenia, while the effect on the female genital organs was most marked. He quoted several instances of the latter. Dr. Pauchet had performed 122 cases of short-circuiting with 28 deaths, 52 of total colectomy with 6 deaths, 4 due to leakage and 2 to cardiac failure, and 21 cases of right-sided hemicolectomy with 1 death. It was notable that he had had no deaths where colectomy had been performed in two stages. Some of his deaths, he pointed out, might have been avoided by a more perfect technique, and he now, as a result of these failures, avoided end-to-end suture of fat intestine, was careful to select a well-vascularised part of the ileum for anastomosis, and operated only on colons that had been adequately evacuated. As regards the sequelæ, diarrhœa when it occurred, was due to faulty co-aptation at the anastomosis, or to torsion of the anastomosis loop, or to adhesions; and constipation was often due to the same causes. Not all unsuccessful results, however, could be attributed to faulty operation or improper after-treatment. Dr. Pauchet gave instances of other causes. He estimated that of ten colectomies there was one death for operation and nine operative successes, of which three would be good results, three average or satisfactory, and three in which there was no improvement. The cases in which little or no improvement occurred were due to the fact, that although removal of the colon cured the stercorræmia which had initiated the patient's troubles, it could not cure the degenerative changes induced by the stercorræmia in other organs and notably the endocrine glands. It was therefore very important to make patients undergo careful and prolonged after-treatment following colectomy. He recommended organo-therapeutic treatment, with physical exercises and breathing exercises, and mental re-education. By these means he believed that in future better results would follow from Lane's operation.

Colectomy a Safe and Necessary Operation.

Sir W. ARBUTHNOT LANE had little to add to the statements he had so often made and written as to the treatment of intestinal stasis by colectomy. He agreed with Dr. Hurst that it was a disgrace to medicine that colectomy for intestinal stasis should ever be necessary, but nevertheless the necessity frequently arose. He had not published all his results since he had never confined his operations to cases which might be termed "good surgical risks." On the contrary, he had operated frequently in the presence of other serious diseases, such as tubercle, rheumatoid arthritis, &c. As an instance of the sort of patient upon whom he had operated, he described the medical history of an ex-Canadian soldier sent to him after having had no less than 16 abdominal operations, including the performance, and later the undoing, and later still the remaking of an ileo-sigmoidostomy. This man had toured the surgical clinics of North America. At the Mayo Brothers' clinic he was told that the only surgeon who could effect a cure in his case was Lane, of England. The man was accordingly sent over to him. He performed a total colectomy with extreme difficulty owing to the numerous anastomoses, and the man was now in perfect health and working in the backwoods.

He believed that in experienced hands the operation offered almost incalculable advantages in return for a comparatively small risk. The risk of all abdominal operations varied inversely as the abdominal tension, and as the result of removing the colon these patients were left with an abdomen in which the tension was nearly nil. The only cause of failure and anxiety was the formation of adhesions, and this might be reduced in frequency by care in covering all raw surfaces at operation, though this was not always possible where operations, such as colostomy, gastro-enterostomy, or partial colectomy had already been performed.

Dr. LOUIS GROSS had seen the excised colon already described by Sir Arthur Keith, and had been much impressed by the pigmented cells and by the necrosis of Auerbach's plexus, since these were similar to the appearances described by McCarrison as occurring in the megacolon associated with "deficiency disease." He (the speaker) had followed this up by experimental work on rats, some of which were fed on a diet deficient in vitamin-B, while others were fed on normal diets as controls. Not only had he produced somewhat similar changes in rats, but it was noticed that vitamin-B starvation profoundly affected the movements of the gut; the excised terminal ileum of normal animals was found to contract 27 to 30 times a minute, while that of the vitamin-B starved animals contracted only 17 to 20 times, the contractions being of less amplitude. It was therefore easy to see how the propelling power of the gut might be affected by diet, and intestinal stasis be produced. Further, a dilated colon, a condition seen in 30 per cent. of normal rats, occurred in 70 per cent. of the vitamin-starved animals. He thought these facts might be of profound significance when it was realised that whole populations, even in parts of the United Kingdom, were living on the verge of vitamin-B starvation.

The Colon not a Useless Organ.

Mr. J. P. LOCKHART-MUMMERY did not consider the normal colon a vestigial or useless organ. Patients on whom colectomy had been performed were at a disadvantage in many respects—one of these was that

they were deprived of the organ which mainly excreted certain drugs. Morphia had already been mentioned, but chloroform and arsenic were amongst the drugs which had become very dangerous to these patients by reason of their almost total inability to excrete them. The profuse diarrhœa which certain colectomy cases suffered from did not occur when the operation had been performed for true intestinal stasis, but it might be very distressing. In one case it was proved by feeding with methylene-blue stained food and other means that the food passed through the whole alimentary tract in 3½ to 4½ hours. Though he realised these disadvantages, he thought that the operation of total colectomy was indicated for Hirschsprung's disease, multiple polypi of the colon, and certain cases of intestinal stasis. It had been stated that patients never died of intestinal stasis; he, however, had recorded one case in which death took place from this cause. This patient, for whom he had performed cæcostomy, was so profoundly poisoned that no sign of healing of the operation wound occurred up till the time of his death six weeks later—an event unparalleled in the speaker's experience. Post mortem the colon was found to be a mere saccular cesspool. In such cases the muscular tissue of the colon had completely disappeared, and the wall of the gut was merely fibrous; for these cases colectomy was a proper, and, in fact, the only resort. The presence of muscular tissue in the colon could be demonstrated by X ray examination of an opaque meal; segmentation seen under these circumstances was definite proof of the presence of muscle and an absolute contra-indication to colectomy. He agreed with those speakers who said that colectomy should never be necessary for intestinal stasis; yet the operation was sometimes useful.

Cases of Total Colectomy Followed Up.

Mr. E. G. SLESINGER reported that he had endeavoured to follow 50 cases of total colectomy for chronic intestinal stasis performed by Sir Arbuthnot Lane during 1911, 1912, and 1913. These were all female cases; he had unfortunately lost the address book of the male cases operated on during the same period. Before giving the figures, he called attention to the fact that in all operative statistics the mortality was influenced by the operability figure. Many of Lane's cases had been chronic invalids for years, and a considerable number were extreme surgical risks. Having seen these cases before operation, he was amazed at the after-results, which in many cases amounted to a resurrection. Of the 50 female cases he had followed, two died from operation, one from hæmorrhage, and one of a pulmonary embolus, giving an operative mortality of 4 per cent. One other patient died of acute intestinal obstruction some months after operation, giving a mortality from operation and one year afterwards of 6 per cent. Of the remaining 47 cases only 25 could be traced. In 22 cases not traced, he had no reason to suppose that the results were any less favourable, as in his experience it was usually easier to keep touch with failures than with successes.

The 25 cases traced were divided into four groups: (1) Those who were quite well in all respects and living a normal life, at work or otherwise—18 cases = 72 per cent. (2) Those who were definitely better, but still suffering in certain ways—3 cases = 12 per cent. (3) Those who were "no better" for operation—2 cases = 8 per cent. (4) Two cases who had died, one in 1915, and one in 1919. In both cases the relatives stated they were much better for the operation in the intervening four and seven years—2 cases = 8 per cent.

Of the 18 patients who state they are quite well:—

One kept a boarding-house. One stated that she was digging up her allotment when her letter arrived. One was conducting a choir and singing solos. One had been married and widowed since operation and had a baby six years old. She did all the work for herself and child. One wrote, "I could not possibly wish to feel better than I do." She was in domestic service. One stated she felt quite well and had put on weight from 8 st. to 12 st. 12½ lb. One had married and been living happily in Pretoria for three years. One had been working in a Government office for several years and had had no sick leave. One was back at her original work as a children's nurse. She had been an invalid for some years before operation. One was well and had gained weight from 7 st. to 9 st. 6 lb. One patient who had phthisis and a tubercular tarsus stated she was "better than ever in my life, no trace of tuberculosis"; she was working as a housekeeper. One patient who exhibited microbic cyanosis and who weighed 4 st. 6 lb. in 1911 was now 10 st. 10½ lb. She "played tennis, danced, rowed, and did everything a normal person does"; she had been happily married for five years. One patient was a doctor's daughter; he wrote, "she is now in perfect health." Five other patients stated that they felt quite well and three of them had married since operation.

These patients were all chronic invalids, in many cases bedridden for several years prior to operation. Of the three cases partially relieved, two were well between attacks of "flatulence," during which they had pain and diarrhœa. Of the two cases who were no better, one apparently suffered from severe chronic intestinal obstruction, and the other case stated to her doctor that she was no better and suffered very great pain. Her doctor added that she was "able to do all her housework, though she says she does it in agony." Apart from the three cases only "partially relieved," none suffered from troublesome diarrhœa although some had occasional transient attacks.

He considered that the proportion of cures (72 per cent.) shown by these figures was an an ample vindication of Sir Arbuthnot Lane's operation, when the previous condition of the patients was considered. The number of these women who had since married was also striking; those who had seen them before operation would have placed the possibility of their marrying only second to their chance of recovering. He had no figures for ileo-sigmoidostomy without colectomy, but his impression was that the results were not so good.

Post-Operative Changes in the Ileum.

Mr. H. TYRRELL GRAY first described the changes in the intestine in the region of the anastomosis following partial or complete colectomy. The anastomosis in either case enlarged to two or three times its original size, and the adjacent large intestine became thin, atrophied, and flaccid. In hemicolectomy the same change occurred in the terminal ileum, but after complete colectomy the small intestine became progressively hypertrophied and distended, due, he believed, to the mechanical obstruction of the anal sphincter, in the absence of the normally protective ileo-cæcal valve. Operation had in fact imposed a mechanical obstruction on the lower ileum which it was never intended by nature to overcome, and this constituted a serious objection to a complete colectomy. X ray observations supported this objection, showing that the ileal delay after complete colectomy occurred near the anastomosis. Whereas, after hemicolectomy, the delay occurred at a spot more or less remote from the colon. The degenerative changes occurring after colectomy accounted for the gradual modification of the post-operative diarrhœa into a return in many cases to the original constipation. Flatulence and dyspepsia were common symptoms even when there was an improvement in the general condition, and the remote result, even of hemicolectomy, was most disappointing—only about 30 per cent. of cases could be said to be entirely successful. The sequelæ of hemicolectomy had therefore to be weighed against the symptoms of the condition for which the operation was performed. (1) In obstructive lesions, such as carcinoma, local symptoms so predominated that the minor sequelæ of operation were hardly appreciated, and cure was complete. (2) When the operation had been performed for the impaired function due to inflammation invading the neuromuscular tissues, the results were fairly good, but not so good as in the former case. (3) When colon stasis arose, as he believed it frequently did, from failure of the normal supports of the bowel, resulting in the stretching of the mesentery with its contained vessels and nerves, little was to be gained from any

form of colectomy, which usually resulted in the superimposition of the unpleasant sequelæ already described upon the pre-operative symptoms. These considerations had led him to abandon hemicolectomy for all but those cases where the colon was obviously severely diseased.

SECTION OF OTOLOGY.

AN ordinary meeting of this section of the Royal Society of Medicine was held on March 17th, with Dr. A. LOGAN TURNER (Edinburgh), President of the section, in the chair.

Functional Deafness.

Dr. DAN MCKENZIE gave particulars of two cases of functional deafness, in which there was a sudden recovery from absolute nerve-deafness. In the first, an old lady complained that she had been stone-deaf several weeks, and she was unable to hear either voice or tuning-fork. Both meatuses were blocked with impacted cerumen, and on this being removed she declared she could hear. There was some deafness still, probably senile. He did not doubt that the obstructive deafness, superimposed upon the slight nerve-deafness, had induced, by suggestion, a complete loss of all perception of sound.

The second case was that of a man, aged 56, who was operated upon for sessile osteomata which were occluding both external meatuses and causing deafness, chiefly on the left side. On this side the auricle was reflected forward after a post-aural incision; on the right side the operation was done without displacing the auricle. Transitory facial paralysis followed the operation, and the reactionary swelling of both meatal walls led to a continuation of the obstructive deafness. Ten days after the operation the patient became suddenly quite deaf in both ears. It was regarded as functional deafness and a favourable prognosis given. A few days later the hearing on the right side was restored with startling suddenness, and now, six months later, the hearing on that side was normal. He suggested an incision which would ensure the avoidance of the facial nerve.

Extra-dural Abscess.

Mr. E. D. DAVIS exhibited a female patient, aged 26, who, in December last was taken into hospital with what was regarded as meningitis and suppuration of the left ear, which ear had been for two years discharging pus. A month previously her medical attendant had treated her for abscess of the ear, and on Dec. 1st she had severe headache and vomiting for ten hours. When Mr. Davis first saw the patient, three days later, she had severe left frontal and occipital headache, but she answered questions sensibly. The temperature was 100·8° F., pulse 92, respiration 24. There was no nystagmus, but the neck was rigid, and there was tenderness of the temporal fossa. An offensive purulent discharge was coming from the left ear, and there was granulation tissue in the roof, and an attic perforation. On lumbar puncture the fluid was turbid and reduced Fehling's solution. There were in it numerous pus cells, but no organisms. Mr. Davis at once performed the radical mastoid operation on the left side, and found much foul pus in the lateral sinus groove, extending forwards between the dura and petrous bone to the aqueduct of the vestibule and internal auditory meatus. The lateral sinus was found to be patent, with no thrombosis. There was definite improvement for eight days, at the end of which she again complained of severe headache and vomited. Lumbar puncture yielded clear, sterile fluid. The patient was drowsy, and there was nystagmus to the left. Dr. Adie diagnosed abscess in the posterior fossa. This region was therefore trephined behind the lateral sinus and foul pus evacuated. Slow recovery followed this procedure. The pus from the extra-dural abscess produced pneumococci and *B. proteus*. The lubar puncture fluid produced pus, pneumococci, and *B. proteus*.

Mr. J. F. O'MALLEY, discussing the probable path of infection in the case, said that as the bone conduction was good he did not think the infection had been translabyrinthine. His view was that the abscess was the antecedent condition, and that the subsequent meningitis brought the patient for treatment.

Sir WILLIAM MILLIGAN agreed with Mr. O'Malley's view. He raised the question of the desirability or otherwise of making a counter-incision for the promotion of efficient drainage in these extensive cerebellar cases. Since he had made a counter opening behind the lateral sinus his results had been better, and he recommended it. He warmly commended Mr. Davis on his triumph in this case.

Sir JAMES DUNDAS-GRANT expressed his agreement with Sir William Milligan, and related a case in which the advantage was exemplified.

Other cases were shown and discussed.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

A MEETING of this Society was held on March 17th at 1, Upper Montague-street, W.C., with Dr. W. J. HOWARTH, the President, in the chair. Sir SHIRLEY MURPHY was elected an honorary member of the Society, and the President recalled that Sir Shirley Murphy had held the positions of M.O.H. of St. Pancras and first M.O.H. of the County of London, as well as having been hon. sec. and twice president of their Society and editor of their *Journal*.

Dr. W. MCCONNEL WANKLYN read a paper entitled

A Review of the Present Position of Small-pox and Vaccination as Affecting this Country.

He said that nothing was more striking in public health than the alteration in the incidence and mortality of this disease since the last epidemic in 1901–3. In each of the last 16 years the deaths in London had been in single figures, and in 10 of the 16 had been nil. He compared this with the mortality in the past, often reaching four figures. Within the personal recollection of many the small-pox cycle was only four or five years from top to top of each succeeding wave, and often shorter. The period had gradually lengthened, until the present cycle, if the term were still applicable, had lasted no less than 20 years, a period without precedent and still unfinished. This was the more remarkable because it had included the greatest war in history. In the war years the small-pox incidence had been trifling, whereas the Franco-German war had been marked by a frightful outbreak of the disease, 42,084 deaths being recorded in the two years 1871 and 1872 in England and Wales and 9698 in London alone. The fact was that the curse was lifted and the spell broken. Dr. Wanklyn claimed that the present position was due in large measure to the great improvement in the methods of diagnosis of the disease, and he put in the forefront of his address a eulogium of Thomas Frank Ricketts (b. 1864, d. 1918) to whose researches while in charge of the London Small-pox Hospital this was due. Ricketts wrote in 1900 that although the diagnosis of small-pox seemed to present so great difficulties in practice, yet by his methods a certain diagnosis could be arrived at in almost every case; and this, Dr. Wanklyn said, was true.

Dr. Wanklyn then proceeded to review the factors which might have contributed to the fall in the disease. With regard to the hypothesis that there had been a natural change whereby the "contagiosity of small-pox" or its "epidemic pressure" had been lessened, he expressed no definite view, though he adduced evidence to show that in some cases at any rate the disease was still highly virulent and apt to spread. They were on firmer ground when they considered the improvements which had taken place in methods of small-pox prevention; such improvements were most marked, and special reference was made to London in this respect, because the health of the metropolis had a profound effect upon that of the rest of the country. In connexion with the influence of vaccination they were confronted with the fact that the recent

fall in small-pox had actually been coincident in this country with a marked decrease in vaccination, the percentage of babies vaccinated having fallen from 63 to 41 per cent. between 1908 and 1918. As against this, when small-pox was especially threatening, about 7,000,000 war personnel had been vaccinated, and Dr. Wanklyn also laid great stress on the protection which this country obtains from the much more perfect systems of vaccination and revaccination which prevail on the continent of Europe. The thickest streams of traffic which reached us came from European ports, and if the mainland were free from small-pox we enjoyed the benefit. Just as at the time of the war of 1871 we shared in the huge European pandemic which probably caused at least half a million of deaths, so in the war of 1914–18 we shared Europe's freedom from the disease. But for Jenner's discovery, Dr. Wanklyn suggested, small-pox would have made the war impossible. A further factor was the effective control by port sanitary authorities, who, using those methods of diagnosis laid down by Ricketts, were now able to stop the majority of incoming cases. The great source of danger in the spread of small-pox was the undetected case. Medical practitioners often had not the clinical equipment which would lead them to suspect its presence, and the epidemic of 1901–2 was undoubtedly due to missed cases in London. It was such considerations as these which led the L.C.C. in 1904 to institute the system of issuing periodically information about the presence of small-pox, and of placing at the disposal of medical practitioners the system of diagnosis which Ricketts had devised. Small-pox outbreaks were like rebellions in that action in the early stages could quell them. Early recognition of the disease was all-important. The psychological factor, the point of view of the sanitary officer, was also most important, and the aim should be to have no secondary cases from a small-pox focus.

With regard to the future, Dr. Wanklyn expressed the view that owing to the unvaccinated state of the population of this country we stood in a position of the utmost insecurity. The infection was still broadcast in the world, and he quoted the epidemic tragedies in the South Sea Islands, Iceland, and Ceylon, where small-pox had had a virgin soil to luxuriate in. The loss in life and money from a small-pox epidemic would be enormous. Yet the problem of small-pox could be wiped out in a few months by the operation of universal vaccination. If each member of the community thus shouldered his share of the common burden there would be no need for our defensive system of small-pox brigades. The community had thrown away lives by the hundred thousand rather than act in accordance with knowledge. Not only Jenner's but also Ricketts's work was neglected, for though thoroughly tested 20 years ago no mention of Ricketts's method had yet found its way into some of our principal text-books for medical students. In conclusion, our object should be the complete annihilation of small-pox which, pursued by true epidemiological methods, should be followed into its breeding places and there destroyed.

The PRESIDENT, in thanking Dr. Wanklyn for his paper, remarked that it was strange that there could still be people so obstinate as to refuse to recognise the efficacy of vaccination. The number of antivaccinists, however, rapidly diminished in epidemic times, especially amongst those who were brought most closely in contact with cases. He had been very struck by Dr. Wanklyn's exposition of how much we in this country owed to the continental peoples for their implicit faith in and perfect practice of vaccination. The work of the port sanitary authorities was not well recognised, and this was largely because the results were all of a negative character. He laid stress on the great importance of the work done by public health departments in following up small-pox contacts. It was important that the claims of antivaccinists should not be passively accepted, but should be rebutted by all possible means. The President referred to the presence at the meeting of Dr. John C. McVail, whose great services in connexion with vaccination were well known.

Dr. JOHN C. MCVAIL said that he was satisfied that vaccination would play as great a part against small-pox in the future as in the past, but in a different way. We must face the fact that the country would not have compulsory vaccination, and that the system must be voluntary. There was now a practically unlimited supply of vaccine lymph available at short notice, and this would enable them to cope with any outbreak. He remembered the outbreak of 1871–73, when the lymph available by arm-to-arm vaccination was quite insufficient to meet the needs of the situation. This was now altered. There would always be a number of people caught out at the beginning of a small-pox outbreak, but the terror of the disease would rapidly ensure vaccination of the whole invaded community. Given an old-fashioned epidemic, no legislation would be required. There was no teacher like small-pox, and the decline in small-pox and the decline in vaccination were cause and effect. An advantage of vaccination following an outbreak was that one got the benefit of *recent* vaccination. With the vigilance which a modern public health department controlled by its M.O.H. could exercise, he had not much fear of big epidemics. Small-pox could be defied without universal vaccination. Still he believed in maintaining the vaccination of the whole community at as high a level as possible. He referred to the Lancashire epidemic in 1920 when the type was very mild. The whole forces of the county M.O.H. were brought to bear, doctors were specially appointed for the work, and the outbreak was rapidly controlled. He had noticed that M.O.H.'s often referred to the danger of mild small-pox, from the point of view of missed cases, but it should be remembered that such cases were very mildly infectious, not striking beyond the patient's immediate surroundings. The infectiveness was in proportion to the amount of rash, and there was little infecting power in a few pimples. Moreover, severe small-pox was not always diagnosed. A general practitioner who often did not see a case in 20 years could not be expected to diagnose the disease. He must have the help of an expert. There was not always clinical material for teaching the disease and teachers were often compelled to demonstrate chicken-pox cases to teach the anatomical distribution of the rash by contrast. He had known confluent small-pox diagnosed as universal herpes! With regard to the future, one would have to live a thousand years to know all about epidemic waves. Would small-pox ever prevail again in this country as in the past? Meade wrote a book on plague in 1720, years after the last outbreak in England, which was alarmist about the future, but the disease never reappeared. We must, however, always be ready with our hospitals and other machinery to deal with small-pox if it arrived.

Dr. W. BUTLER said he could not help feeling that as regards small-pox we were living in a fool's paradise from which we might get a rude awakening. Foci of the disease were constantly with us, and if the bounds were burst there would be a very serious situation. It was an administrative blunder when the L.G.B. took action which enabled parents to avoid vaccination for their children without any trouble. The history of the world showed that unprotected populations led to catastrophic epidemics. The old force of the Vaccination Acts should be restored.

Dr. W. G. WILLOUGHBY (M.O.H. Eastbourne) said that the people had become educated up to Dr. McVail's standard. They argued that the children need not be vaccinated because the public health service could successfully deal with cases of small-pox when they arise. This was a compliment to the profession. In 1916–17 he was concerned in an outbreak of small-pox amongst 160,000 ill-vaccinated troops, mostly Australian. There were 120 cases and the epidemic was successfully controlled. It was impossible to dream of compulsory vaccination of the population. He never had any difficulty in getting all contacts to be vaccinated, and had always been able to check outbreaks after a few cases.

Dr. A. BALL (M.O.H., Romford) said he had been struck by the following points in his experience at Middleton of the 1920 Lancashire outbreak: (1) The low infectivity of the cases; (2) the mildness of the great majority (there were no deaths); (3) the extreme liberality with which they were supplied with lymph; (4) the whole outbreak was due to missed cases; (5) the extreme value of team-work; (6) all the medical officers concerned were conversant with Ricketts's methods of diagnosis referred to by Dr. Wanklyn.

Dr. G. CLARK TROTTER (M.O.H., Islington) raised the question of contagion from infected material. He had had cases in Paisley in 1911 which appeared to have been caused by raw cotton from India. Similar cases had been observed at Stockport. Shortly afterwards there had been a case in Stirlingshire where the only possible source of infection seemed to be a letter which had been received from India.

Dr. A. B. MCMASTER (M.O.H., Dover) said that the mild outbreak at Middleton contrasted with an outbreak at Rochdale in 1901–3, where the type was very bad. He had found that vaccination up to the fifth day of contact gave protection, but not later. As emphasising the efficiency of continental vaccination he mentioned that last year at Dover there were 330,000 incoming passengers, including 113,000 aliens, and there had been only 3 cases of small-pox. Demonstration of the effect of the vaccination of male adults concerned in the war was recently given by a case of small-pox mixing amongst people at a labour exchange without the occurrence of a single secondary case.

MEDICO-LEGAL SOCIETY.

PROFESSIONAL SECRECY.

A MEETING of this Society was held at the Royal Society of Medicine, 1, Wimpole-street, London, W., on March 21st and 28th, with Lord Justice ATKIN, the President, in the chair, when Lord DAWSON OF PENN opened a discussion on Professional Secrecy, which is published in full in the opening pages of this issue of THE LANCET.

Discussion.

The PRESIDENT, on behalf of the Society, hastened to tender to Lord Dawson grateful thanks for having given up his valuable time to deliver such an important and well-thought-out address, on a topic which was, on the whole, the most important which had ever engaged the Society's attention. It concerned not only medical men, and not merely lawyers in their capacity as ministers of justice, but also the public at large. Possibly Lord Dawson had in view a discussion on the subject in a larger and more august assembly; at any rate he probably thought it would be an advantage to have the matter discussed pro and con before this Society. He appealed for a full and free discussion.

Lord RUSSELL complimented Lord Dawson on the comprehensive and lucid manner in which he had brought the subject forward. He sympathised with Lord Dawson's statement that he could not very well put before the meeting anything of a cut-and-dried character in the form of an Act of Parliament, or a section of such. He understood the opener that he threw overboard the question of privilege for doctors in the case of crime, stating that a doctor ought not to tell if all he knew was that a crime had been committed. In the present condition of the law a doctor, like anybody else, who knew of a felony must give information about it. For example, highway robbery with violence was not, even this side of St. George's Channel, uncommon, and he would put the case of armed people having robbed a post office, and one of the robbers was known to have received a bullet in the thigh. If while the pursuit was hot a doctor was called upon to treat a man for bullet wound in the thigh, was it contended that such doctor would be doing his duty to the community and the State—especially if someone had been murdered—if he refused to tell, simply because it was after the crime had been committed? He hoped it would be agreed that crime must be excluded in any question of privilege given to a doctor. No one was entitled to consult his lawyer as to the best means of committing a future crime. What was to be done with the witness in the box, and what was one to get out of him? Lord Dawson had mentioned a divorce case in which a doctor who ran a venereal disease clinic was called to give evidence in regard to one of the parties who had been a patient at it. Here came a question of the balance of public advantage, and Lord Russell thought the treatment of the venereal disease more important than any obligation to give information. That was recognised by the Local Government Board Rules; the disease required to be stamped out, and all encouragement should be given to patients to attend the clinics for this purpose by assuring them that no use would be made of the information. He would be willing for that to be made the law if those regulations were not considered strong enough. There was also the case of an accident happening in the street. The person injured might not make a claim on the insurance company until sometime afterwards, at which time the doctor's evidence was the only evidence available; therefore if the insurance company believed the man had exaggerated the account of the injury, was it fair to debar them from putting the doctor into the box?

Lord Russell thought Lord Dawson's enthusiasm on this question had led him to prove rather too much, for he said the doctor saw his patient when his mind and body were undermined by disease, and when, therefore, he was less cautious and secretive than normally. At such times he might confess to having committed a crime long ago. Was a doctor compelled to repeat that? Lord Russell suggested there were at least two answers to that. First, if the doctor observed his Hippocratic oath—to which the speaker took no exception, especially as it did not trench on legal proceedings—it would not be known to anybody else that these things had been confided to him, hence there would be no one to take him into court and ask him about them. Secondly, he thought Lord Dawson had proved too much because these confidences were not made to doctors only by people in bad health; they were made to father, mother, sister, and other relatives, and they were preserved because those relatives did not communicate them to the world at large. If doctors were to have privilege in this respect, it would have to be extended to nurses—who heard much during patients' delirium—and members of the family. Concerning the privilege granted to priests, Lord Russell believed that the Seal of Confessional was recognised only by the Roman Church; and if it were sought to extend it to other ministers who received statements in confession, it must be extended to the Salvation Army, too. Though the law was that the Roman Catholic priest would be compelled to disclose what was said under the Seal of the Confessional, the priest would sooner go to prison for contempt of court and stay there indefinitely than break what was one of the strictest rules of his church. And where a doctor could not disclose information without violating his professional honour, he would be right to adopt the attitude of saying he refused to answer, and inviting the judge to commit him to prison. In regard to civil cases, he wished to consider the position of the witness from the lawyer's point of view; the doctor, it was contended, was not to be asked things which he had learned from his patient. But supposing it was a divorce case, and that it was his patient who had called him; was the doctor to be free, after he had given his statement, from answering further questions, such as concerning whether she was hysterical and likely to imagine things, to make unfounded complaints, and so on? No witness could be allowed to go into a court of law and select what evidence he would give: he had sworn to tell the whole truth. He suggested that the reasons why in practice these questions did not arise were, in the first place, that as a rule these confidences had been preserved inviolate by the physician, hence were not known to anybody likely to call him as a witness. Secondly, there would be an objection to calling such

a witness because there would be uncertainty as to what he was likely to say. Even in civil cases he thought it would be a dangerous rule of law to give to the medical man unqualified privilege and protection. Medical men were a numerous class, and not all of them had the high ideals which guided the members of this Society, and he referred to a recent conviction for producing abortion in the case of a doctor occupying a public position in this city. Some privilege might possibly be given, such as in the instance of treatment of venereal disease. But when it came to putting the requirements into words, as Lord Dawson evidently appreciated, many grave questions arose which would have to be considered and provided for.

Sir JOHN GOODWIN (Director-General A.M.S.) said he was constantly in positions of extreme difficulty when appealed to for a decision as to what should be done. The line of action usually taken by his department was as follows: A soldier was discharged from the army and was seeking employment, and was offered a position by a Government or other department, and the War Office was applied to for his previous medical history. Nothing was entered on the discharge certificate as to the physical disability for which he was discharged, unless the cause was a wound or war injury. The latter was stated because if a man had received such injury and had now recovered from it, that fact, rather than standing in the way of employment, was in his favour. When a man was discharged physically unfit, the remark made was, "Discharged on account of medical unfitness for army service, although fit for employment in civil life." Certain Government departments set aside a proportion of their vacancies for ex-Service men, but on the understanding that the A.M. Department assisted in determining what was the man's degree of fitness for their employment. If this information were not given, probably the departments of the Government would be closed to a considerable number of ex-Service men. Copies of the men's medical sheets were given only to heads of departments, and were marked," Solely for the information of the medical adviser to the department." When asked to give information on civil cases, as in divorce actions, they declined, and similarly when asked as to venereal disease, though, if required, they furnished the name of the medical officer who attended the case. To that medical officer copies of the case sheets were sent under confidential cover. In serious criminal cases they furnished copies of medical documents to the defence and the prosecution if so requested. Copies were also sent to medical men to assist them in treating cases they were attending. If a definite policy could be laid down by this Society his duty in these anxious cases would be much simpler.

Lord RIDDELL said that though at first he had felt favourably towards Lord Dawson's views, he did not now, as he had been impressed by the suggestions at the end of his speech, for the privilege he was claiming was that of the patient, not that of the doctor. The lawyer's privilege was really the privilege of his client. When it was said that the doctor knowing an injustice was about to be done should warn the patient that he must do the right thing, and that if he did not the doctor would, that would be adding a new terror to consulting the medical profession. It was easy to lay down general principles, but difficult to reduce them to writing. In the case of the lawyer and his client, the client did not consult the lawyer except so far as it was necessary for the lawyer to give advice or to conduct his case; but the doctor was himself concerned in dealing with the facts which would have to be considered by the courts and which led up to the cause of action. It was interesting to inquire whether this agitation was one on the part of the laity or on the part of the medical profession. Doctors were always, naturally, anxious to improve their status; but he had not heard whether the patients desired that doctors should have this privilege in civil proceedings. When it became necessary for the court to ascertain whether certain things took place at certain times, it would be adopting a very dangerous rule to allow the doctor to say, "No, I am a medical man; I decline to tell you whether I treated this patient on such and such a date; and even if I give you that information, I decline to say what the complaint was." With regard to the privilege of priests, he did not attach importance to that circumstance.

Resumed Discussion.

At the adjourned meeting on Tuesday, March 28th, the chair was again occupied by Lord Justice ATKIN, the President.

Sir LENTHAL CHEATLE agreed that if there was to be any future legislation on individual and public health due regard should be paid to professional secrecy; but if the legislation was to be limited to what occurred as between the profession and the Law Courts, it was likely to delay more vital problems. The question of the privilege of priests he did not regard as belonging to this discussion. Public health and professional secrecy could not now be separated from each other. He spoke of the disease-carrier, and the need for notification and isolation of such, who should receive compensation during the period. In the case of gonorrhœal ophthalmia inquiry showed that the reason children were still being received into special schools who had been blinded by the disease was that though midwives were carrying out their notification duties, doctors and institutions were not uniformly doing so. By notifying certain infectious diseases the State had not only absolved the doctor from his professional secrecy, but showed that no individual doctor had sufficient power or authority to ensure the public health.

Dr. LANGDON-DOWN asked how the degree of privilege which Lord Dawson required was to be met. Lord Dawson agreed that medical witnesses were usually dealt with tenderly by the Courts, and Dr. Langdon-Down thought the cases quoted by Lord Dawson did not afford good ground for any changes in the law. In the case of the venereal disease clinic, should there be a differentiation in the matter of professional secrecy between such clinics and private patients? He thought not, and legislation should not be asked in such a matter. The two law cases quoted by Lord Dawson, he contended, did not bear on the principle governing the disclosure of medical secrets. The public should be made fully aware of the extent to which information given to the doctor was secret; then there could be no charge of dishonourable conduct when it became a duty to disclose. No evidence had been produced to show that the law on the matter had resulted in any sapping of professional conduct.

Dr. MACKEITH pleaded that professional secrecy should be complete and absolute, and that the medical man in whom it reposed should be prepared to go to any length in resisting pressure to divulge. He objected to the remark of Lord Riddell at the last meeting that the medical man was out for improving his status. That was established already; the aim was to improve the position of the patients. He looked forward to the time when doctors would play a greater part in Parliament in connexion with measures of public health.

Major BROOKE MURRAY, speaking of his work in the Ministry of Pensions, in which the rights of claims had to be arrived at by consulting the archives of the Board of Health in conjunction with interviewing the applicants, referred to the trouble caused by the ladies concerned, who were disproportionately anxious that nothing should be known of "family skeletons," which were present in some form in fully 70 per cent. of the cases, and were often of a trivial nature. He thought it probable that the desire for a strengthening of professional secrecy arose from this cause.

Sir ROBERT ARMSTRONG-JONES dealt briefly with the subject from the psychological standpoint, remarking that, in his view, a side of psychology which had been sadly neglected was the moral or ethical side—i.e., the question of obligation, of duty, of "ought." His sympathies were naturally with the medical aspect of privilege, and Lord Dawson had placed the interests of the patient above all other interests, thus observing

one of the highest traditions of medicine. But an attempt to limit medical privilege to civil actions would produce occasions which would negative the proper course of justice. Generally, he was not in favour of privileges, as the trend of them was to retard or deflect the course of justice. The chief reasons for which privilege was claimed had to do with sex offences. Was it contended that a doctor was to treat venereal disease without pointing out that the patient was a danger to those surrounding him? The moral laws were based on the experience of the community, and they were independent of the demands or interests of the individual. He did not feel himself able to support Lord Dawson's thesis.

Sir WILLIAM J. COLLINS agreed that the relationship between the patient and the medical man was a very special one; but in other respects the medical man's case could not be compared with those of the lawyer or the priest, for the medical man was a skilled observer of facts as well as the receiver of communications. Hence the medical man might be the only person capable of giving the skilled evidence required in a court of justice. There was no formula which could be held to apply to all cases. But he did not agree that privilege should be universal. Still, he was with Lord Dawson in regard to the two cases his lordship quoted. He was inclined to applaud the Chester doctor for the stand he took in defence of his privilege, but would have applauded him more if the resistance had been of a more stalwart character.

The President's Summing-Up.

The PRESIDENT said it was not his intention to advocate one side rather than the other, but only to say a word on the legal position. The problem was a very important and living one; and a large number of high-minded men felt acutely the conflict which had raged between what they conceived to be their duty as citizens and their duty to their patients. Most of them were also keenly alive to the interests of public health, feeling that an unwarranted disclosure of professional secrets might be detrimental to the public health, in so far as it was likely to deter patients from consulting medical men, or, if they did so, from making the full disclosure which was essential. He did not in any way regard this as a dispute between medical men and lawyers; and it would be unfortunate if the question were put forward in that sense. The doctor's interest was in the public health, the lawyer's was in the administration of justice. It was very important that this matter should be decided not by doctors nor by lawyers, but by the public at large. The House of Commons itself, though it contained many lawyers and was graced by some doctors, consisted of patients. The guide must be as to whether what was proposed was, or was not, for the public good. Even Lord Dawson did not claim that the medical profession should have unrestricted privilege. Absolute privilege would mean that the medical man need not divulge if he knew a man about to be hanged for murder was innocent of it. That was an extreme case, but there were many cases in the criminal law in which the issues were those of liberty and of reputation; and many cases arose in which the identity of the criminal had depended entirely on the evidence given by a doctor who had been consulted. The distinction Lord Dawson drew, that while the doctor might reveal a professional secret to vindicate the individual, he was not to do it to vindicate the law, was one which Lord Atkin did not think would stand examination. Again, in cases coming before the Divorce Court, these involved the most serious issues to reputations of husband or wife, and very serious issues in regard to the family. Husband and wife, for instance, had given evidence of having suffered from venereal disease, and the question was as to which infected the other. Especially in the case of some women the solution of the question was one of life or death to them; and, conceivably, the doctor held the secret in his breast, for he knew the respective dates of consultation for this disease. Was the innocent party to be adjudged guilty because the doctor promised not to tell? Was it to be said that the doctor sold his own discretion and his honour for the fee? Again, issues arose in connexion with fraudulent insurance claims for injury, &c. Here also the doctor's evidence was vital. One of the grievances, as framed by Lord Dawson, was a very serious one. It was that in which a patient, under stress of illness, confided to the doctor many facts in his past life, not all of medical interest; and the question was asked whether ruthless counsel should extract these intimate confidences from the doctor in the witness-box. The President had never known such a case in all his experience, neither had his colleagues to whom he had spoken on the matter. Moreover, he had never known counsel rash enough to ask for such information, and if he did he would never know what kind of answer he was going to receive. Finally, he said there were very grave difficulties in this matter, and it would be agreed that this was not the time to make light of the administration of law and order, and to alter it unless on grave public grounds.

Lord Dawson's Reply.

Lord DAWSON, in a brief reply, said, as it had been necessary for him to cover wide ground in his opening, that it was not possible for him to be very profound. He had no intent or wish to undermine the position or the administration of the law. The privilege enjoyed by lawyers he conceived to be in the public interest, and that was shown by the way in which justice was administered. He did not agree that the ends of the law were at all times the only consideration. It was always necessary to remember that every profession and specialism had its dangers; and those engaged in administering the law were apt to think that to meet the ends of justice, every other consideration could be overridden. His object in quoting the two cases was to show that the public were becoming alarmed on the matter, and were fearing that the secrecy which they had been assured obtained between doctor and patient was not so in fact. His contention was that the doctor should have a measure of privilege beyond that of the ordinary witness. It had been said that the matter could be safely left to the discretion of the judge. To that he would agree if the judge, when these questions arose, would adjourn to chambers and allow the doctor to point out what would be the result if the evidence were insisted upon. In the ordinary course the judge could not know. The point was, not that cases of the kind he spoke of occurred very often; if they happened not more than once in 20 years it would be enough for him; for it would suffice to undermine that confidence of the public in doctors which they considered ought to be preserved. He could not conceive anybody seriously contending that there should be no measure of privilege at all; but whether that was to be given on the discretion of the judge or granted as a right, he agreed was a matter which would have to be decided. However, any decision which forced members of a learned profession into the position of having to go to prison in order to vindicate their honour or to carry out a course which they considered was in the interests of the patients and of the public, was one which it was only necessary to state in order to condemn. All he asked was that a measure of privilege should be granted. Conceding that, it would be found that medical men, while desiring to protect the honour of the public and their own reputations, would not be by any means unmindful of their rights and duties as citizens.

Dr. John S. Griffiths has been appointed a Deputy Lieutenant for Gloucestershire.

Dr. James Ferguson Lees, Director-General of Public Health, Egypt, has been appointed a Commander of the Order of the British Empire for services in Egypt and the Soudan.

Reviews and Notices of Books.

DIETETICS.

Food and the Principles of Dietetics. Fifth edition. By ROBERT HUTCHISON, M.D. Edin., F.R.C.P., Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond-street. London: Edward Arnold and Co. 1922. Pp. 610. 21*s.*

THE author of this well-known work has, in the past, done much to bring the subject of dietetics in relation to medicine into a reasonable position in this country, and his text-book has passed through five editions in two decades. The present edition, coming as it does after spells of war and famine, and the experience which these have brought to medicine, contains much added information, some of which the author acquired while acting as a member of the Food (War) Committee of the Royal Society. It is satisfactory to observe that he has been able, while recognising their importance, to keep the vitamins in their proper place, as accessories and nothing more. So few of our contemporary food experts have been able to withstand the slow pressure of the ever-accumulating mass of literature on this subject, and commonly give way beneath it.

The work should enable intelligent persons to construct suitable dietaries for all sorts of diseases, since it deals with the fundamental principles of dietaries, physiological and constructive rather than empirical. Frank and valuable opinions are given as to the value of a large number of patent foods, infant and adult, many of which offer particular advantages for use in the sick-room. The tables and analyses are valuable for reference, but many of the illustrations do not arouse us to enthusiasm. In these days it surely ought not to be necessary to illustrate the composition of milk by a drawing of a tumbler containing what might be a stratified cocktail—so much protein, so much sugar, and so forth—or to insert into a serious book a picture of a banana divided into sections like a chunk of Neapolitan ice. If anyone failed to get what information he needs from the most lucid text and tables, the book would be thrown away on him in any case. The sections devoted to infant feeding are especially good, containing all the most recent information and devoid of fads. The value of the book is greatly enhanced by many references to original sources of the most varied description and the work has a high standard in every respect. It is scientific, without being too academic, sensible in practical matters, and very well written.

Précis d'Alimentation des Nourrissons. Fourth edition. Par Dr. EUGÈNE TERRIEN, Ancien chef de clinique infantile de la faculté à l'Hôpital des Enfants Malades. Paris: Masson et Cie. 1921. Pp. 309. Fr.12.

FRENCH practice in infant feeding evidently differs very much from our own. The difference is, in fact, so great in cases of gastro-intestinal disorders that we doubt whether any English-trained practitioner could properly avail himself of Dr. Terrien's extensive experience without spending much time in orientating himself. The portions of the book which deal with breast-feeding, and with artificial feeding with milk, are of necessity quite simple; this part of the work is excellent though somewhat empirical, as is also the section on feeding after the ninth month. It is the feeding of sick children which presents most difficulty to English readers, for not only are clinical types classified on a different pattern but the method of treatment employed differs widely in detail though perhaps not in principle. A favourite diet in gastro-intestinal troubles, for instance, is a *bouillie de malt*, followed by or combined with *lait caillé* (sour milk). The first of these is made by the action of malt extract on almost any farinaceous food, and would correspond with some well-known infant foods widely sold in this country in the dry state; the second is made by the action of the lactic organism on milk. The results appear to be good. Whey does not seem to be much used. Important chapters are devoted to defective nutrition, defective growth, syphilis, and the examination of the stools. There are also included some useful data regarding weights, lengths, eruption of teeth, &c. Specialists on infant feeding should certainly read this book, because of the strong contrast between French and English methods.

Précis d'Alimentation des Jeunes Infants. Par Dr. EUGÈNE TERRIEN. Paris: Masson et Cie. 1922. Pp. 465. Fr.14.

THIS recent book will be found more readily assimilable by English readers, and of more modern tone than its predecessor. It is an excellent treatise on the diet of children from weaning up to the age of 10 years. First the diet of the healthy child is discussed from every point of view bearing on the child's physiological needs. The practical means of realising these needs is next considered, and then the effects of age and the methods of investigation of the adequacy of diets are explained. The second part of the volume deals with diet under pathological conditions, and in the third part of the book various adjuvants, such as climate, sunlight, gymnastics, massage, and hydrotherapy, and so forth, are considered in their relation to diet. The chief difficulty to be anticipated in using the book is the unfamiliarity of some of the foods and methods of preparation; moreover, the metric system is unfortunately not yet in current use in this country.

Conférences Pratiques sur l'Alimentation des Nourrissons. Third edition. Par Dr. P. NOBÉCOURT, Professeur de clinique médicale des enfants à la Faculté de Médecine de Paris; Médecin de l'Hôpital des Enfants Malades. Paris: Masson et Cie. 1922. Fr.18.

THIS excellent book can be safely recommended to those who wish to gain a clear idea of the most generally accepted French views regarding the nutrition of infants; it is clear and logical and contains much valuable practical information. After the growth and requirements of the normal infant are studied four chapters are devoted to natural lactation and wet-nursing. Then follow chapters on artificial feeding, and of which two are devoted to the source, conservation, and modification of milks. The results of defective feeding and the management of weaning are also discussed. Two chapters devoted to French laws for the protection of mothers, nurses, and children are of much interest. Finally, there are five chapters devoted to the feeding of children under pathological conditions. The book is written for nurses and physicians who intend to pay especial attention to the subject, and admirably fulfils its purpose. It is a matter for regret that many of the actual practical details would, for various reasons, be found difficult to apply in this country.

TREATMENT OF COMMON FEMALE AILMENTS.

By F. J. MCCANN, M.D. Edin., M.R.C.P., F.R.C.S., Surgeon to In-patients, Samaritan Free Hospital for Women. London: Edward Arnold and Co. 1922. Pp. 152. 8*s.* 6*d.*

THIS book is written to serve as a guide to the practitioner in the treatment of the female ailments most frequent in private practice. The author considers such common conditions as menstrual disorders, hæmorrhage, discharge, backward displacements of the uterus, and prolapse. In view of their importance not only from the standpoint of treatment but also as ætiological factors in the production of diseases of women, he also devotes chapters to the consideration of abortion and puerperal infection. The book is a record of the author's experience and methods, and contains a great deal of valuable information and useful details of treatment and notes on drugs.

Inasmuch as it deals only with treatment it is necessarily incomplete, but it will prove useful to the practitioner. There is a valuable chapter on the diagnosis of cancer and great stress is laid on the importance of early recognition of the disease.

ORIGIN AND EVOLUTION OF THE HUMAN RACE.

By ALBERT CHURCHWARD, M.D. Brux., M.R.C.P. Edin., L.S.A., F.G.S. London: George Allen and Unwin. 1921. Pp. 511. 45*s*.

THE perusal of a volume which tells the reader that the habitual criminal's disability is "probably owing to the abnormal arrangement of the corpuscles of energy inherent in the body-matter," and that "it is in the religious part of the brain that the greatest stability of the past is photographed," reminds the reviewer, irrelevantly enough, of the learned Tollius, who, in 1649, informed an astounded world that chipped and smoothed stone implements (such as modern writers call neolithic) were "generated in the sky by a fulgurous exhalation conglobed in a cloud by the circumposed humour." It is not easy to decide which of the learned doctors, Tollius or Churchward, should receive the palm for lucidity of exposition, but there can be no doubt that the former had the more picturesque style and a finer ear for sonorous periods which help one to forget that he was writing nonsense. But perhaps a more apposite comparison can be found to convey some idea of the nature and scope of Dr. Churchward's work.

In former times, and especially during the nineteenth century, it was a popular hobby with retired officers and others, who had found evidence in outlying parts of the world of customs and beliefs that reminded them of incidents in the Old Testament, to elaborate theories of the ultimate destination of the Lost Ten Tribes. Others pored over ancient tomes in the library of the British Museum to rediscover Atlantis and inflict upon a long-suffering world the oft-told tale of this solution of all anthropological difficulties. But since the world has been leavened with ideas of Darwinian evolution the Ten Tribes and Atlantis have had to take a back place, and the fashionable version of essentially the same "stunt" is the claim to have devised some simple formula in explanation of "the origin and evolution of the human race." There is this in common between the searcher after the Ten Tribes and Atlantis and Dr. Churchward: both of them appreciate the undoubted fact, which is not adequately recognised by most ethnologists, that in the early history of civilisation there was a widespread diffusion of culture from the Plains of Shinar and the Valley of the Nile to the ends of the earth; but in both cases the value to the writers of the recognition of this fundamental truth has been destroyed by their failure to see it in its right perspective and to marshal the evidence in support of it soberly and logically.

TUMOURS INNOCENT AND MALIGNANT.

Seventh edition. By Sir JOHN BLAND-SUTTON, LL.D., F.R.C.S., Consulting Surgeon to the Middlesex Hospital. London: Cassell and Company, Ltd. 1922. Pp. 806. 30*s*.

Sir John Bland-Sutton's popular work is probably as widely known as any surgical text-book in the English language, so that to do more than announce the appearance of this, the seventh, edition is almost a work of supererogation. By skilful editing a considerable amount of new matter and some 20 new illustrations have been added without any corresponding increase in the size of the book. All the old features, the descriptions of curious and interesting cases which can scarcely be found anywhere else, have been retained, and the numerous references to the author's own ripe experience lend a personal touch to the work which is rare in modern text-books. In certain respects we are inclined to differ from the author. He regards the renal sarcoma of infants as a simple tumour, not as a teratoma, and though he refers to neuroblastomata of the adrenal, he still describes the similar tumours of the retina as gliomata or sarcomata, and his explanation of the pathology of polycystic kidney is not convincing.

The author's point of view is essentially that of the morbid anatomist rather than the histologist, and in microscopic pathology his teaching often leaves something to be desired. But the defect, if it be one, is inherent in a work of this type, and we would not willingly have it otherwise, for any alteration in the plan of the work would rob it of those characteristics which have made it one of the most successful text-books of recent times.

THE HEART RHYTHMS.

By PAUL DUDLEY LAMSON, M.D., Associate Professor of Pharmacology, Johns Hopkins University. Baltimore: Williams and Wilkins Company. 1921. Pp. 100.

WHATEVER may be the future advances in cardiac physiology and pathology, it is a fact that the cardiac irregularities as they occur clinically are limited in number. With rare exceptions any irregularity encountered can quickly be placed in one of the few simple groups which have been so often enumerated as to be a commonplace to the modern student. The classification is circumscribed, and it meets practical needs. It is surprising how naturally disturbances of the heart rhythm may be considered apart from the other functions of the heart. Dr. Lamson has written an elementary book without claim to original views, and he has studiously confined himself to the elements of his restricted field. The various cardiographic methods are described and the distinctive features of the waves seen on polygram and electrocardiogram. We are introduced to the four sites from which impulses can arise, and then to the abnormal contractions which do arise from each site. In this way a physiological classification is built up step by step. The illustrations are well chosen, though perhaps unnecessarily diagrammatic for a subject which lends itself so readily to demonstration by actual clinical records.

The second part of the book is chiefly concerned with the interpretation of polygraphic records, and again the key classification is strictly followed. Difficulties of interpretation are not raised and the less common irregularities are not mentioned. We are tempted to suggest that a better title would have been "Heart Rhythms Simplified." It does not deal with the clinical significance of abnormal rhythms, and the idea of simplicity and finality inseparable from such a book requires definite correction by the subsequent study of a larger book on the subject. But it is intended as an introduction only, for students and practitioners, and the physiological principles underlying the several abnormal heart rhythms could not be more simply and soundly presented.

DEMENTIA FOLLOWING EPILEPSY.

La Démence chez les Épileptiques. By Dr. M. BRISSOT and Dr. H. BOURILHET. Paris: A. Maloine et Fils. 1921. Pp. 112. Fr.5.

A DETAILED account of 33 cases of epileptic dementia observed at the Haut-Barrieux Institution for Epileptics in the Department of Allier fills rather more than half this little volume. This institution is intended for epileptics who are neither imbecile, insane, nor grossly mentally deteriorated, and corresponds to our English colonies for epileptics. The remainder of the book sets out to give a brief general account of epileptic dementia wherein the findings of other authorities are not ignored. By epileptic dementia the authors mean dementia supervening in patients who present the typical syndrome of what is generally called idiopathic or essential epilepsy. They definitely exclude all dementias associated with fits due, for instance, to focal or diffuse cerebral lesions; these latter dementias indeed are primarily independent of any convulsive attacks, though their progress may be considerably accelerated by them. In discussing

ætiology they refer briefly to the various hereditary and personal antecedent factors that must be sought for by inquiry, and in addition lay stress on three factors of importance in determining the dementia—viz., the age of the patient, the frequency of the fits, and their severity. The younger the patient the worse the prognosis. Frequency of attacks is of great importance, their severity, in the opinion of the authors, still more so. It is the major attacks, they think, that cause mental deterioration, and if, in certain cases, dementia follows minor epilepsy it can only be because of the extreme frequency of the attacks. This is contrary to the view, very generally held, that minor attacks are more destructive to the mind than major.

After a full description of the onset and symptoms of dementia in epileptics, the authors give three chief indications as to treatment. Medicinal treatment to prevent the occurrence of fits must be persevered with; manual work out of doors must be found for the patients; and the state of their digestion must be constantly watched. The book concludes with an optimistic account of boric acid as a preventive of fits. However, it appears that the drug was only tried on nine cases, and in them records are only available for a few months; two of the cases were worse for the treatment. The history of the therapeutics of epilepsy shows us how careful and prolonged must be the trial of any drug, before we claim it as of value in preventing fits.

This little book certainly gives in a concise, yet readable form most of the important facts about dementia occurring in epileptics, while it cannot be said to contain much that is not accessible in such standard works as that of Aldren Turner in this country, or Spratling in America. The chapter on treatment is manifestly incomplete. Attempts to combat the progressive narrowing of the mental horizon are apparently limited to the provision of manual outdoor occupations. The provision of new and ever changing interests for the epileptic patient in the early stages of his intellectual "obtusion" is surely the most important of all therapeutic measures, and study of each individual case to see where he retains closest touch with his environment is, as a rule, amply repaid. The confirmed epileptic egocentric, out of touch with the rest of the world, withdrawn, it may be, into a world of phantasy within himself, may become an enthusiastic member of society when, as during a game of football or cricket, he is interested in his occupation. Finally, any book on epilepsy, and on epileptic dementia in particular, is incomplete which contains no reference to the more modern concept of the disease particularly associated with the name of Pierce Clark. The conception of epilepsy as a regression, and the mental characteristics of the epileptic which lead to his maladjustment to his environment, receive no mention here; nor, indeed, is there any attempt to describe the epileptic temperament which precedes and is so indissolubly bound up with the character of the epileptic dementia.

ULTRAMICROSCOPY.

Die klinische Ultramikroskopie und die Frühdiagnose der Syphilis. By GUSTAV FANTL, Assistant in the Dermatological Clinic in Prag. Berlin: S. Karger. 1921. Pp. 29.

THIS small brochure is written with the intention of presenting a clear and concise account of the diagnosis of syphilis in the clinical laboratory by means of the dark ground. The author rightly weights the balance in favour of the ultramicroscope as against staining methods. The various pieces of apparatus necessary and their special uses are all specified. We cannot agree with the writer, however, in his recommendation of the use of a 1/12 in. oil immersion lens in preference to 1/6 in. dry lens, while the part dealing with the differential diagnosis of the various spirochætes is, in the light of present knowledge, extremely incomplete. On the whole the book serves admirably the purpose for which it was intended—the instruction of practitioners and students.

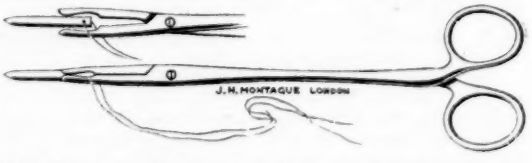
JOURNALS.

AMERICAN JOURNAL OF OPHTHALMOLOGY, February, 1922.—Three papers are devoted to Barraquer's suction operation for cataract extraction. J. O. McReynolds describes it. C. E. McDannald describes a modification of his own devising. A. S. Green and L. D. Green criticise it. Their conclusions are: (1) that by Barraquer's method the cataract *may* be removed with little difficulty followed by a beautiful result, but (2) the capsule may rupture, with the result that a poor capsulotomy has been done, and (3) the cataract may be removed, but the strong pull required to break the suspensory ligament may result in a detachment of the retina. Following on these papers W. Zentmayer gives details of 18 cases operated on recently by Colonel Henry Smith during his visit to Philadelphia by his method of intracapsular extraction. He finds the results have been by no means ideal. Vitreous loss occurred in 38 per cent. of the cases and incarceration of the iris in the same proportion. In two cases the vision resulting was only perception of light. Judged by these papers, it would seem that in America intracapsular extraction, whether by the method of Barraquer or by that of Smith, has not come to stay.—T. B. Holloway discusses what he aptly calls snowball vitreous opacities, a condition resembling cholesterin in the vitreous, except that the white bodies do not reflect light in the way that cholesterin crystals do. The two cases are analogous and may have a similar explanation in some alteration of the composition of the blood, but the fact that in both cases the condition is generally found in only one eye needs explaining.—J. P. Schaeffer contributes an anatomical paper on the Visual Pathway and the Paranasal Sinuses. Thirteen figures of sections of skulls in various directions illustrate the variability in these relations, and confirm the work of Onodi on the same subject.—Pierre Gaudissart of Brussels has investigated the possible connexion of albuminuric retinitis and an excess of cholesterin in the blood, but his results are entirely negative. There is a note by H. W. Cowper (illustrated by a photograph) of a case of symmetric cystic enlargement of the lacrymal glands due to syphilis, and another by R. von der Heydt on Physiologic Hyaloid Artery remnants disclosed by the Gullstrand slit lamp in conjunction with the binocular microscope when observing the living eye.

New Inventions.

RADIUM APPLICATOR FORCEPS.

THE insertion of tubes containing radium is not always quite so simple a matter as may appear at first sight, especially when there is any resistance to be overcome as in the case of fibroid tumours or



other firm growths. In such cases it only too frequently happens that the radium applicator is seized with a Spencer Wells or any other tightly gripping instrument that happens to be available, with the inevitable result that the tube is damaged.

The applicator forceps shown in the accompanying sketch has been made to my design by Mr. J. H. Montague, of 69, New Bond-street, W.; it holds the radium tube firmly without allowing of lateral movement and the tube therefore cannot be scratched or otherwise damaged.

C. P. G. WAKELEY, F.R.C.S. Eng.
King's College Hospital, S.E. 5.

THE LANCET.

LONDON: SATURDAY, APRIL 1, 1922.

Professional Secrecy.

THE address by Lord DAWSON OF PENN to the Medico-Legal Society, opening a debate commenced on March 21st and concluded on Tuesday last, will be found in full in the front of our present issue; it deserves the careful attention of us all, as well as the eulogiums of Lord Justice ATKIN, President of the Society, who characterised the discussion as bidding fair to be the most important one in which the members had yet been engaged. And we may call attention here to Lord Justice ATKIN'S surmise that the subject of privilege for the medical witness may later form the material for legislation upon its introduction to the notice of the Upper Chamber. Certainly the extent to which patients may rely upon their medical advisers for absolute privacy is an important matter to the public as well as to the medical profession; yet the mass of opinion in favour of giving the medical witness great privilege when attempting to preserve professional secrecy, though unanimous on general grounds, differs in detail in an embarrassing manner. This situation of uncertainty requires amendment.

The opinion of the British Medical Association, as embodied in the motions put forward by the Central Ethical Committee of the Association at the last annual general meeting, has undergone modification. These motions, leaving aside the question of the compulsory notification of certain diseases, took the view that the ruling in a court of law for the disclosure of information obtained in the exercise of professional duties must be obeyed or disobeyed on the medical man's own responsibility, but that, if further attempts were made to relax the general rules of the medical profession with regard to secrecy, the practitioner would receive the support of the Association when assailed through any such encroachment. An amendment, however, which went further than the motions resolved the following, with a few dissentient voices: "That the Association use all its power to support a member of the Association who refuses to divulge, without the patient's consent, information obtained in the exercise of his professional duties, except when it is already provided by Act of Parliament that he must do so." This amendment cannot become the accepted policy of the Association until the next representative meeting, but it is in the meantime understood that a further modification of the position has been found necessary, lest the Association should be committed to the defence of individual members whose attitude might be unreasonable. Lord DAWSON invites us to look at the question mainly on public grounds, and he does this by citing in the first place an example of just such an encroachment as was under consideration in the amendment quoted above. The example cited by Lord DAWSON is that of the medical man who was told, and brusquely told, in a recent divorce case that he had no option but to disclose certain information which he had obtained while acting as the medical adviser at a venereal clinic. Here, over and above the extreme reluctance which any medical man would have to the giving of information with regard to one of his patients, the fact has to be kept in mind that the practitioner did enjoy, or believed himself to enjoy, a privileged position. Any refusal to reply to the particular questions asked him could have been met by the rejoinder that the official regulations laid down by the Local Government Board stated definitely that "all information obtained in regard to any person treated at an approved clinic shall be regarded as confidential." The medical man perforce obeyed the judge, but the ruling from the Bench produced immediately a profound feeling that the preservation of professional secrecy was not a professional matter but a public one, and one of a far-reaching as well as intimate nature. Nothing has ever aroused the public, as well as the medical man, to the knowledge that the existing situation is illogical and perilous so thoroughly as this ruling. For, say the public as well as the practitioner, if one disclosure, and that of a very personal nature, can be made, so can another; if the venereal clinics were instituted in order that the population of both sexes should receive prompt and gratuitous treatment, that treatment, which is sought voluntarily, must be confidential; the public, not yet too alert to the dangers lying behind untreated venereal disease, and not anxious to undergo the humiliating ordeal of treatment, on learning that their secrets may not be kept, will make no widespread resort to the clinics, while it is to these clinics that all look for the abatement of venereal disease in the future. Many situations could be, and have been brought forward as arguments to prove that some measure of privilege should be extended to the medical witness. We adduce this one situation because it exactly typifies that which all the others typify in some measure; it shows that privilege for the medical witness is necessary for the public good. Lord DAWSON contrasts the unlimited privilege with regard to the statements of their clients enjoyed by lawyers, and the sacro-sanctity of confession to the priest, with the absence of privilege which is the lot of the medical witness; for the degree to which the medical witness can preserve inviolate the confidences of patients is dictated simply by sentiment, seeing that at any juncture and in any circumstances any judge may order complete disclosure in the court of all that has passed in the consulting-room, the clinic, or the home. Too much stress must not be laid on such comparisons, for the circumstances in which the consultations take place, or the secrets there disclosed, are not analogous in all three professions. Confessions made to the priest are practically never ordered to be divulged; those made to the lawyer are, as a rule, of a selected kind bearing only on particular points at issue; while the medical information is gained with no eye to any legal proceedings and must often entail familiarity not only with what the patient thinks relevant, but with anything and everything that has ever happened to him or her or their forbears. It is perfectly true that the lawyer and the priest enjoy a privilege which is denied to the doctor, but the doctor claims his right to a measure of privilege for reasons not possessed by the members of other professions. We do not claim privilege because lawyers or priests enjoy it; we claim it on the unassailable ground that it is for the public good.

Lord DAWSON concluded his plea for a sound definition of the privilege which should be extended to doctors in respect of their patients' confidences by proposing that the amount of that privilege, its conditions and its limitations, should be considered at a round-table conference between doctors and lawyers, the principle having been conceded that a measure of privilege should be granted to doctors beyond what is granted to the ordinary citizen. This

seems to us to be a wise proposal, and indeed the only one that is likely to resolve the difficulties inherent in a question involving the highest ideals and most delicate transactions of social life. If legislation is contemplated to deal with these difficulties, it will proceed in a more orderly and direct fashion if fundamental differences of opinion between the two professions mainly concerned are first adjusted. The range of Lord DAWSON'S address, the number of debatable subjects germane to his central theme, and the introduction of important issues by competent speakers at the debate, sufficiently show how infinitely much is bound up in the attempt to define what measure of privilege should be extended to the medical witness in respect of his patient's confidences. Certainly much of this ground could be cleared before discussion takes place in either Chamber, and the time spent in a round-table conference would be saved over and over again when members of the legislature are confronted with the problems.

Dental Sepsis and General Disease.

SINCE first Dr. WILLIAM HUNTER directed attention to oral sepsis as a factor in the causation of general disease, the net has been spread far and wide and an increasing number of conditions drawn in to be explained by mouth infection. Oral sepsis in this aspect has become an article of faith with both doctor and dentist, a faith based on clinical rather than on pathological authority. The absence of confirmation by morbid anatomy does not in itself invalidate the claims made for the part played by oral sepsis in general disease, but as it stands alone the clinical evidence must be set forth with scrupulous regard to other possible sources of infection. Naturally, in some cases the mere sequence of events may leave no doubt in the mind of doctor, dentist, or patient as to the relation between cause and effect. The house-surgeon who incises an abscess, the tuberculosis officer who collapses a diseased lung, regard themselves without further confirmation, and rightly, as the cause of dramatic general betterment. Mr. H. W. ARCHER-HALL'S confidence may be equally justified in his record (on p. 633) of a third case of blindness, this time bilateral, rapidly cured by removal of teeth showing apical abscesses. And in this view he was supported by a series of excellent dental radiograms. On the purely negative side a clearer perspective would undoubtedly be gained if all the cases were recorded in which no improvement in the general condition follows the elimination of oral sepsis, or in which apparent cure is succeeded by relapse. That such cases exist, and that they do not form a negligible proportion of the total, is within the experience of most dentists.

It is not in this country alone that the proper limits of oral sepsis are being hotly discussed. Prof. HUGO SCHOTTMÜLLER of Hamburg, who claims for himself the discovery of the *Streptococcus viridans*, has recently taken the field in an attack[1] on the validity of many of the conclusions of Prof. MARTIN FISCHER, of Cincinatti, whose work[2] on the infections of the mouth is well known. FISCHER and his school have put forward dental infection as a cause of such conditions as hyperthyroidism, cardiac arrhythmia, arterio-sclerosis, and Bright's disease, and while SCHOTTMÜLLER is prepared to concede that oral sepsis, like infection elsewhere, is capable of affecting the general health, he does not believe that it acts as a direct cause of general disease. Local foci of infection—this is his argument—can only set up general infection when they are in free communication with the blood stream, and then only when large vessels are concerned. This would rule out dental abscesses which are usually cut off from the general circulation by a layer of granulation tissue. After making some 10,000 bacteriological examinations in his own clinic, SCHOTTMÜLLER was unable to find any infective condition which could be ascribed to oral sepsis; whenever organisms were present in the blood they were always traced to some source other than the teeth. It is well-known that acute dental abscesses can lead to severe fatal metastases such as occur in Ludwig's angina or in osteomyelitis, but these are not the cases with which FISCHER deals. A characteristic example is as follows. A doctor under FISCHER'S care suffered for three years from weakness of the right arm, associated with pain on pressure over the brachial plexus. X rays showed a thickening over the cervical vertebræ. All the patient's teeth save five had already been removed and the remainder received careful attention. As the paresis continued the last five teeth were extracted, and a few weeks later the use of the arm was completely restored. But Prof. SCHOTTMÜLLER mistrusts the conclusion that the five teeth were responsible for the paresis. What the patient said is not evidence.

Truth doubtless lies somewhere between the extreme claims now prevalent in America and the almost equally extreme negation of the Hamburg polyclinic. Although dental infections may often be so situated that there is no large outpouring of bacteria into the circulation, yet there is a possibility of small doses of bacteria escaping from time to time and altering the bodily resistance. Bacterial toxins may also pass into the circulation from the mouth and predispose to infection elsewhere. Even should the direct causative rôle of oral sepsis to systemic disease assumed by many clinicians be not yet proved, no one is in a position to deny that oral sepsis constitutes a potentially and often an actually dangerous condition. But before all, an effort should be directed towards making pathological proof more convincing, for it is not at all satisfactory to doctor and dentist, and still less so to the patient, that in so many cases the extraction of teeth, infected but still serviceable, should be an experiment of which the outcome cannot be predicted with any certainty. Whether the general condition for which they were extracted is relieved or not is at present a hazard.

[1] Deutsch. med. Wochenschr., Feb. 9th, 1922.
[2] Infektionen der Mundhöhle und Allgemeinerkrankungen, Dresden and Leipzig.

Health in the Air Force.

THE suggested economy in the estimate for the medical services of the Royal Air Force seems to be unduly sweeping, the amount shown for 1921–22 being £142,000 and for 1922–23 £83,000, or a reduction of nearly £60,000, Dr. MURRAY was thus voicing a widely felt anxiety when he called the Secretary of State's attention in the House of Commons to this large reduction, and asked for an assurance that it did not imply any decrease in the efficiency of the Air Medical Service. Capt. GUEST was, however, able to reassure him, for the reduction is due chiefly to diminished payments for hospital treatment, the proposal being for the Royal Air Force now to deal directly with big civilian hospitals instead of keeping up expensive establishments of their own. The review of the report on the health of the Royal Air Force for the year 1920, which we conclude in the

present number, contains evidence of the large amount of painstaking care which is being devoted to the airman's health. The report contains many tables involving accurate and minute records. Nosological classification is, indeed, carried so far as to have hardly more than provisional value for the numbers reached in a twelvemonth, but the statistician ten years hence will have an enviable opportunity of computing sickness rates on a new class of material. The trouble with all such analyses is to ensure sufficient accuracy in recording the observations on which the figures are founded and to avoid wasting time classifying them. In this case a highly ingenious system of mechanical sorting has been adopted in which, once the material has been transferred to certain cards, they are available at any future date for special investigation in respect of a particular period. The clerical labour saved by punching holes in code cards and leaving a counting machine to do the rest must be seen to be realised. Study of the incidence of disease and injury among the various occupations in the Air Force has already given interesting results, which will lead in their turn to new lines for future examination. The groups of carpenters, riggers, drivers, fitters, metal workers, and other skilled trades all show a disease rate above that for the total force, rising in the case of certain specialised workers to 637 per 1000 of average annual trade strength, against 410 per 1000 of aircraft hands. The proportion of disease to injury in the Air Force is notably higher abroad (7 : 1) than at home (6 : 1), and the factors concerned in this difference are interestingly set forth in the report. In home squadrons the proportion of disease to injury sinks as low as 3¼ to 1, the risk inherent in flying being increased by propeller and starting-car accidents as well as those of skilled trades. The report itself may be studied with interest as a bold attempt to face a novel situation with the added physiological equipment of the time.

A COMBINED APPEAL FOR THE HOSPITALS OF LONDON.

King Edward's Hospital Fund for London has undertaken the organisation of an appeal on behalf of the voluntary hospitals of London, with the aid of the Hospital Saturday Fund, the Joint Council of the Order of St. John and the British Red Cross Society, the League of Mercy, the London Regional Committee of the British Hospitals Association, the Metropolitan Hospital Sunday Fund, and the hospitals themselves. His Royal Highness the Prince of Wales has approved of his name, as President of the King's Fund, being used in connexion with the appeal. An organising committee has been set up, under the chairmanship of Sir Alan Anderson, K.B.E., (chairman of the Revenue Committee of the King's Fund); Sir George Lawson Johnston, K.B.E. (member of Council of King's Fund), is chairman of the Executive Committee, with Mr. E. S. Shrapnell-Smith, C.B.E., as Director-General of the Appeal Campaign, and Captain E. J. C. Chapman, M.C., as his deputy. Offices have been secured at 19, Berkeley-street, W. 1, to which address all communications relating to the appeal should be sent.

LITERARY INTELLIGENCE.—The Oxford University Press announce among their new and forthcoming books: "Greek Biology and Medicine" and "Mediæval Science," by Dr. Charles Singer (Clarendon Press); "The Evolution of Modern Medicine," by Sir William Osler, and "Respiration," by Prof. J. S. Haldane (for the Yale University Press).—Messrs. W. Heffer and Sons, Ltd., announce the publication of "Fundamentals of Bio-Chemistry in Relation to Human Physiology," by T. R. Parsons, B.Sc., M.A., Demonstrator in Physiology in the University of Cambridge.

Annotations.

"Ne quid nimis."

A YEAR'S ATMOSPHERIC POLLUTION.

THE seventh report [1] of the Committee for the Investigation of Atmospheric Pollution covers the year ending March 31st, 1921, when 31 stations were in operation for measuring deposited impurity. The returns from these showed the mean monthly deposit of impurities to range from 24·85 metric tons per sq. km. to 4·22 in Rothamsted. London occupies an intermediate position with between 11 and 12 metric tons per sq. km. These figures multiplied by 2·56 give values in English tons per sq. mile. Where comparisons were possible with the winter of 1920–21 the deposit was less than in the previous winter in 19 cases and greater in 4, the increase in no case exceeding 7 per cent. On the other hand, there was a fairly general increase—chiefly of tarry matter—in the summer deposit of 1920 as compared with the previous summer, the Meteorological Office gauge showing a plus of 100 per cent. Mr. J. R. Ashworth, D.Sc., describes an attempt made to measure Rochdale's responsibility for its own atmospheric pollution. The gross amount of deposit brought by the west winds into the town from external smoke-laden areas was found to amount to no more than 19 per cent. of the total received in the central gauge, and when this is allowed for Rochdale still maintains its pre-eminence for pollution over other town's of its size and population. This interesting problem might be applied to other cities. Birmingham (Central) heads the list for insoluble carbonaceous matter and ash, Newcastle coming next. The highest deposit of tar was in the Meteorological Office gauge, London, the second highest again being Newcastle. Liverpool showed the highest deposit of soluble matter, Glasgow the second highest along with the highest ammonia. In four cases Rothamsted, which is an open agricultural district, showed the lowest or second lowest deposit; Birmingham (South-Western) also ranks lowest, or second lowest, for four of the elements of pollution; Southport (Hesketh Park) is lowest or second lowest in five instances; and London gauges give the lowest deposits in five cases. It is curious to note in comparing winter with summer that the summer deposit for all elements of pollution was the greater, with the exception of tar and sulphates, both of which are products of combustion.

Six automatic instruments were in operation for measuring suspended impurity, and curves are shown giving the results obtained in London by means of the ingenious automatic instrument devised by Dr. J. S. Owens. In these curves groups of foggy days are plotted together and groups of days without abnormal fog. They go to show that London air is purest between midnight and 6 A.M. On week-days and Saturdays at about 6 A.M. or a little earlier, and on Sundays at about 7 A.M., a rapid increase in the amount of impurity begins. This continues until a maximum for the day is reached, on week-days and Saturdays about 10 A.M., and on Sundays between 11 A.M. and noon. In all cases the quantity of suspended matter begins to fall off rapidly after this maximum, which seldom lasts for an hour, but in the afternoon a second, but lower, maximum appears about 4–5 P.M., continues until 8 P.M. or so, after which a rapid drop from 10 P.M. till midnight brings the quantity again to the minimum. The amount of impurity present evidently bears a close relationship to human activities; the most noticeable fact is the uniformity with which the impurity commences to increase at the time when fires are lighted in the morning and the almost complete absence of impurity during the period from midnight to 6 to 7 A.M., when both domestic and factory fires are out of operation. The peak

[1] M.O. 249. H.M. Stationery Office. 2s.

between 4 to 5 P.M. suggests a tea-time rise. From the fact that the greatest quantity of impurity is found in the forenoon, it may legitimately be inferred that the main source of smoke impurities is from fires during the process of attaining their full heat. The ratio of factory to domestic smoke in Westminster is about 1 to 2·25, and the figures indicate clearly the preponderating effect of domestic fires in causing pollution of the air, a fact strikingly confirmed by the dense fog of Jan. 22nd, 1922, which occurred on a Sunday when domestic fires must have been practically the only source of smoke. An attempt has been made in the report to correlate the number of deaths occurring in London during the last quarter of 1920 with the amount of suspended impurity in the air, which might with advantage be followed up. Finally, a special note is included by Dr. Owens upon fog nuclei, in which it is stated that the diameters of the smoke particles causing London fogs vary between 1/100,000th and 1/20,000th of an inch. During an east wind, when the fog extended as far as Cheam, in Surrey, about 12 miles out, particles of the same size were found in large numbers. The amount of suspended impurity in the air of London during winter appears to be of the order of 1 mg. per c.m. during the day but may fall much below this on clear nights, between midnight and 6 A.M. During a dense fog the amount rises to about 5 mg. per c.m., and it is remarkable how small a quantity of impurity is sufficient to bring about even a dense fog, doubtless owing to the extremely small dimensions of the individual particles. The amount of smoke produced during four morning hours in London is held to be sufficient to account for the total amount of suspended impurity found during a smoke fog.

The report confirms the view, already many times set out in these columns, that urban air pollution is due to unburned fuel from many sources and that a campaign for pure air must be a comprehensive one.

THE SOURCE OF "TONSILS AND ADENOIDS."

THE considerable part of the public who are always opposed to "the knife," and refuse to allow the removal of their children's enlarged tonsils and adenoids, has welcomed the publication of the similar views of a member of the medical profession. However, statistical information is available showing the after-results of operations performed which deprives those suspicious of the accepted surgical treatment of their best argument. School medical officers have especial facilities for seeing children after operations and obtaining valuable information regarding them, not only from the parents but also from the teachers. In the annual school medical report for Derbyshire for 1921 Dr. Sidney Barwise reports that the after-history was obtained in the case of 296 children operated on for the removal of tonsils and adenoids; 87 of them had both defective hearing and discharge from the ear prior to operation; when examined afterwards, in addition to their hearing being improved the ears of 53 were found to be dry and the discharge in the case of 33 others less; in 1 child only was improvement wholly lacking. Of 209 children with impaired hearing, the hearing became normal in 99 and improved in 104; in 6 only did no improvement take place. Dr. Barwise also made inquiries of some 400 parents to obtain their opinion as to the effect of the operation on their children. The replies showed that 75 per cent. of the children were hearing better, 91 per cent. were breathing better, and that 70 per cent. suffered less from repeated colds. Inquiries made of the teachers showed that 79 per cent. of the children improved in their general health and in 75 per cent. an improvement in intelligence occurred and the children became capable of a higher standard of educational work. The prevention of the condition should be one of the aims of public health work. Each of various causes have their determined exponents. In the opinion of some the condition is consequent on lack of development of the maxilla; others attribute the evil to absorption of the products of nasal catarrh, and others still to carious teeth. Obviously careful inquiry to obtain evidence on these points is both welcome and opportune. On p. 663 of this issue will be found a copy of the inquiry form to be used in Derbyshire in connexion with school children. It would seem desirable that similar inquiries should be made in connexion with children below school age attending infant welfare centres. Although the opportunities for conducting the investigation are not so abundant as in the case of children attending school, yet probably sufficient data could be contributed by a group of such centres; valuable evidence might be forthcoming in this way as to the earliest age in which the conditions are present to any considerable extent.

PHYSIOLOGY OF THE GALL-BLADDER.

Meltzer found that when magnesium sulphate was applied to Vater's ampulla at the opening of the common bile-duct into the duodenum, bile was discharged into the gut. He believed that this was due to relaxation of the sphincter, accompanied, in accordance with the law of contrary innervation, by a contraction of the gall-bladder. On this observation Lyon[1] based his technique for the testing of gall-bladder function, and for medical bile-drainage, now so extensively used in America. The technique consists in the introduction into the duodenum of concentrated magnesium sulphate solution and subsequent withdrawal at intervals of duodenal contents for chemical, histological, and bacteriological examination, the assumption being that the second aspiration consisted largely of gall-bladder bile. Much controversy has centred round this technique. Bassler, Luckett, and Lutz[2] observed the gall-bladder in men during operation, and saw neither a relaxation of the sphincter nor a contraction of the gall-bladder when magnesium sulphate was given by a duodenal tube. Accordingly, they doubt the value of the technique. Smithies, Karshner, and Oleson,[3] on the other hand, defend it as useful in practice, and claim quite reasonably that observations made under anæsthesia cannot be regarded as final. L. S. Auster and B. B. Crohn[4] performed experiments on anæsthetised dogs, and in their experiments after laparotomy and duodenotomy the gall-bladder was found distended in all except one—a fasting animal—in which the bladder was seen to be flaccid. A solution of methylene-blue was injected into the gall-bladder to differentiate its content from the bile flowing from the liver. The duodenal mucosa in the region of and including the papilla of Vater was irrigated with magnesium sulphate solution. Although an increased flow of bile was observed, no expulsion of the gall-bladder content was noted. This observation was carried on for several hours in eight dogs. The gall-bladder retained its bile independent of whether the dog was in the fasting or the actively digesting state. Stimulation of liver bile flow, as obtained with magnesium sulphate, was also observed after the application of sodium sulphate, sodium phosphate, peptone, N/10 hydrochloric acid, peptone, bile and sodium glycocholate. No stimulation was seen after the application of water, sodium chloride, or sodium hydroxide. Attempts to produce contraction by nervous stimulation were unsuccessful, nor did direct faradic stimulation of the organ produce contraction or expulsion of contents.

In another series of experiments phenoltetrachlorphthalein was injected intravenously and subsequently recovered when excreted in the bile, and showed the appearance of this substance in the duodenum in from 10 to 15 minutes after injection. A flow into the gall-bladder of liver bile was demonstrated by the recovery of the phenoltetrachlorphthalein from the bladder bile when the cystic duct was patent. None of the dye was found in the sac when the duct was tied. Observations on the filling of gall-bladders emptied by digital compression showed the filling to be a slow and irregular process, in spite

[1] Am. Jr. Med. Sci., 1920, clx., 515. [2] Ibid., 1921, clxii., 674.
[3] Jour. Amer. Med. Assoc., 1921, lxxvii., 2036.
[4] Proc. Soc. for Expt. Biol. and Med., xix., No. 3, 1921.

of the fact that the bile flow into the duodenum may or may not be continuous. Bile flow into the duodenum was observed with regularity in the cases of fasting dogs as also in the absence of immediate digestion. Stasis of gall-bladder contents was investigated in a series of experiments where, under aseptic precautions, a sterilised suspension of an inert, finely divided substance (charcoal or carmine) was introduced into the gall-bladder. The dogs were killed at the end of periods of 12 hours, one, three, and seven days. During these periods they were fed on a mixed ration of protein, fat, carbohydrate, and water. At autopsy, the colouring-matter was recovered from the gall-bladders up to and including three days. No traces were found in the intestinal washings. The bladder was found to have emptied in one week. Patency of the ducts was shown by the slight digital pressure needed to expel the bladder contents. The functions of the gall-bladder are further illustrated by recent experiments of McMaster,[5] who has studied bile secretion in those animals which have no gall-bladder. The chief of these are the horse, peccary, dove, rat, and sometimes the giraffe. In such animals stasis bile never becomes more concentrated than the normal secretion, but this is itself much more concentrated than the liver bile in animals which possess a gall-bladder. The animals with no gall-bladder therefore also lack its physiological representative—that is to say, they have no concentrative arrangements in any part of the duct system.

MYCOLOGY AND MEDICINE.

THE relationship of mycology to medicine was discussed from the standpoints of the clinical pathologist and the pure mycologist by Dr. Aldo Castellani and Mr. J. Ramsbottom, mycologist to the British Museum, at a recent meeting of the Section of Tropical Diseases of the Royal Society of Medicine. Dr. Castellani described various pathological conditions of the tonsils attributable to mycelial invasion by one or other of the four genera, Monilia, Saccharomyces, Oïdium, and Hemispora. He differentiated these genera according to their microscopical and cultural characters, including particularly the presence or absence of asci and mycelium. In the grouping of Monilia, of which he claimed to have isolated ten or more species, he attached importance to fermentative action on various carbohydrates in differentiating one species from another. The acute form of tonsilomycosis, Dr. Castellani said, was common in the tropics, and, though rare in temperate climates, was not altogether uncommon in this country. It was characterised by pyrexia associated with patches of greyish-yellow exudate on tonsils and fauces occasionally spreading to the larynx and bronchi. Recovery was usual. In isolating the particular fungus in culture from the exudate, Dr. Castellani mentioned that he was always careful to exclude the presence of Klebs-Löffler bacilli, but he made no mention of other possible bacterial agents.

Mr. Ramsbottom, who followed Dr. Castellani, lent the necessary balance, from the mycologist's standpoint, to the recognition and grouping of the fungi alleged to play a part in the causation of disease in man. He pleaded for coöperation between human and plant pathologists, not merely in morphological study, but also in the problems of immunity to disease, associating himself in this with Prof. J. B. Farmer and Dr. E. J. Butler. The latter, in his paper [6] read before the Royal Society of Tropical Medicine in January last, brought out in a number of interesting directions the possible allied factors in the causation of states of disease in plants and animals, and in the subsequent discussion cordial coöperation was offered. Mr. Ramsbottom, without impugning the attribution of certain diseases to fungi, whose normal rôle might be that of humble saprophyte, certainly had an impression that medical workers are less diffident in naming the fungi they encounter than are mycologists. Indeed he went so far as to say that the descriptions and figures of fungi appearing in medical papers were often meaningless to the mycologist. The difficulty, he thought, arose from a wrong method of approach. The first essential should be to ascertain the character and arrangement of spores, to be followed by study of cultural characters on various media derived from single spore cultivation. Pleomorphism might be exhibited by fungi at various stages of their life history, and both in the sexual and asexual phases. In most of the fungi supposed to be pathogenic to man the sexual stage was unknown and classification was almost limited to form. The perfect stage, when present, gave the name to the fungus, and in the case of the pathogenic fungi, where the conidial forms were chiefly met with, mycologists were agreed that naming should be based on the stage occurring under natural conditions. Names such as Torula, Monilia, and Oöspora could not rightly be applied to different genera in different branches of mycology. The uncertainties of classification incidental to medical mycology—this was Mr. Ramsbottom's concluding emphasis—would be removed if the bacteriologist allowed full significance to size and shape in the study of fungi, being content to confirm or supplement the morphological study by the less vital information afforded by cultural appearances.

[5] Jour. Exp. Med., 1922, xxxv., 127.
[6] THE LANCET, Jan. 21st, p. 160.

ALBUMINURIA IN PREGNANCY.

IN spite of the immense amount of investigation which has been carried out on the chemical pathology of pregnancy, we are still without sure guidance in the clinical management of the various diseases of pregnancy summed up under the generic name of albuminuria. At a meeting of the Harveian Society on March 23rd, Mr. Aleck Bourne drew attention to the manifold clinical varieties of the toxæmias of pregnancy, and the great difficulty which still exists in forecasting the probable result in individual cases. Mr. Bourne described five clinical types of disease in pregnancy of which the toxæmic basis had been established. The renal type, characterised by the presence of albuminuria, scanty urine, œdema, and raised blood pressure, is the commonest condition, and is dangerous in that it may pass on to eclampsia or total anuria. In the "cerebral" variety a series of fits occurs in relation to labour or delivery, with few or no other symptoms except albuminuria, which does not appear until immediately before the fits, and a raised blood pressure. A third clinical group, referred to as the "gastric" type because for some days the only symptom is uncontrollable vomiting, is rare but frequently very serious. According to Mr. Bourne, vomiting in early pregnancy, in spite of certain non-specific urinary changes, is almost always of "neurotic" origin, as suggested by Dr. A. F. Hurst in THE LANCET of March 18th, but constant vomiting appearing at the end of pregnancy is never to be disregarded, and may be the precursor, sometimes the only precursor, of eclampsia or fatal jaundice. The hepatic form of toxæmia (icterus gravis) is very rare, only three cases having been traced at Queen Charlotte's Hospital in some 18,000 cases of labour over a period of about 10 years. Accidental hæmorrhage is a fifth condition, now included in the toxæmic group on account of the association of albuminuria and other symptoms with necrotic changes in the uterine wall.

The difficulties of prognosis can never be entirely overcome so long as we are ignorant of the source of the toxin and powerless to control its production or neutralisation. Certain clinical experiences, however, are sufficient to excite anxiety and to provide indications for terminating pregnancy without further delay. Apart from a general severity of all symptoms, the chief of these is the appearance of a fresh symptom, such as vomiting or an increase in blood pressure, grafted on to the condition already being treated. Further, the sudden onset of headache, œdema, or visual symptoms is found frequently to herald the comparatively near approach of eclamptic convulsions. The value of a raised blood pressure as a prognostic

sign was shown at the meeting by charts representing the incidence of eclampsia and non-convulsive toxæmia at different blood-pressure readings. Eclampsia was seen to occur frequently with a blood tension of below 160 mm. The mortality curve of all toxæmic patients showed the death-rate (of 105 cases) to be 5 per cent. where the tension was 150 mm. or below, 9 per cent. where the pressure reading lay between 151 and 190, and above 190 mm. the mortality rose sharply to 27 per cent. In the discussion which followed Mr. Bourne's remarks Mr. Eardley Holland drew attention to the importance of regarding toxæmic pregnancy in the light of the possible after-history of the patient. The preliminary results of his investigations showed that at least 12 per cent. of eclamptic patients suffered some permanent functional damage to their kidneys. A subsequent morbidity rate of this extent cannot be without influence on our expectant treatment of severe toxæmia, where every day in the undelivered state may be adding fresh irreparable damage to the kidney. Mr. Holland gave figures of eight cases to show the great danger and even futility of attempting a "cure" of a case of eclampsia which does not include delivery. Dr. Mackenzie Wallis emphasised the difference in the blood and urinary analyses of toxæmia and true nephritis, and showed how it was possible to arrive at a diagnosis of these conditions by examination of the blood and urine. Dr. Simms also gave the results of his pathological experiences, and referred to the anomalies of chloride excretion met with in toxæmia. Sir William Willcox, who presided over the meeting, summed up the chief points that had emerged from the discussion as the difficulties of immediate prognosis and the dangers of permanent renal damage.

EFFICIENCY IN SILK WEAVING.

THE introduction of power-driven machinery obscured for the past generation the influences exerted upon output by the human factor in industry. To-day careful observations are disclosing that this factor makes the difference between profit and loss, even though the machinery may be running perfectly. A recent report issued by the Industrial Fatigue Research Board,[1] which deals with individual differences among silk weavers, establishes the value of the human equation in what would at first sight appear to be an extreme case of machinery controlling output. The investigator, Mr. P. M. Elton, first found that individuals among groups of weavers, when distributed according to their differences in efficiency, gave a distribution similar to that of a probability curve, and that they maintained this distribution when employed on different qualities of cloth. Variations on the same kind of cloth were found, ranging from an efficiency of 43 per cent. to one of 90 per cent., which means that the earnings of the least efficient weaver and the productivity of her loom were only half that of the most efficient weaver. Careful observations of the methods used disclosed that herein lay an explanation of much of the differences observed. No little interest attaches to the way in which these observations were made and tabulated; much of the importance of the present report for future inquiries depends on this. The better weavers, although often appearing to be less busy, adopted labour-saving methods which allowed them to devote more of their energies to production; while poor weavers, apparently working with an excess of zeal, were doing much useless work, a fact which arose from lack of, or faulty, training. Here is exhibited the value to wage-earning, and so indirectly to health as well as to productivity, of a study of the human machine. Mr. Elton holds the observations already made have at least established that good silk weavers (1) possess good eyesight, (2) are observant, (3) are dexterous with both hands, (4) have a delicate sense of touch, and (5) can stand for long periods. Clearly, a girl who has not these qualities should not waste time in learning weaving, and an employer should not incur expenditure in training such a person. The advantages to industrial contentment and well-being, and to profits, from extension of work on these lines is obvious.

[1] An Analysis of the Individual Differences in the Output of Silk Weavers. P. M. Elton. Industrial Fatigue Research Board. Report No. 17. Pp. 38. H.M. Stationery Office. 1922. 1s. 6d.

ANÆSTHESIA FOR INTRACRANIAL SURGERY.

THE best type of anæsthesia for use in intracranial surgery was discussed at a meeting of the Section of Anæsthetics of the Royal Society of Medicine on March 3rd. Dr. Z. Mennell briefly reviewed the gradual change in the methods used during the last 20 years at the National Hospital, Queen-square. The danger of chloroform, which was at the beginning of that time commonly employed, he explained by the much higher percentage necessary in the blood for anæsthesia when the intracranial pressure was raised. Directly the tension is relieved an enormous increase takes place in the volume of blood flowing through the brain, and a dangerous or even lethal dose may suddenly bathe the medullary centres. Anæsthesia deepens directly the dura is opened, whatever anæsthetic is being used. Ether was then substituted for chloroform in the Vernon Harcourt inhaler, and later still was habitually given from a Junker bottle attached to an oxygen cylinder. Mechanical difficulties led to the substitution of infusion anæsthesia for these inhalation methods, and though, said Dr. Mennell, the technique was tiresome and expensive, hedonal gave good results till the war rendered it unobtainable. Dr. Mennell now uses intratracheal ether for all cerebellar, pituitary, or high spinal operations. This is convenient inasmuch as it permits of the extreme flexion of the neck required for some of these operations, and vomiting can be more certainly avoided than by any other method. To patients suffering temporal or parietal operations Dr. Mennell frequently gives ether and oxygen by means of a Junker inhaler, since the intratracheal method is less essential in these cases. Mr. Percy Sargent dwelt on the need of close coöperation between surgeon and anæsthetist, since the variations in intracranial pressure were the most important factor during operations for cerebral tumour. The brain, he added, was tolerant of changes of pressure provided that they were brought about gradually.

THE NEED FOR ANATOMICAL RESEARCH.

AT the recent discussion on Gastric Ulcer, which took place at the Royal Society of Medicine, several speakers alluded to the growth of knowledge concerning this and kindred diseases which has occurred since the advent of abdominal surgery. It would scarcely be an exaggeration to say that it is the surgeon who has stimulated all the modern interest in gastro-intestinal disease, and it is surgical initiative, and occasionally surgical mistakes, which have led to the advances. A review of present-day conceptions of the physiology of the stomach, such as that recently published[1] by Mr. Robert Mailer in the *Edinburgh Medical Journal*, makes it clear, however, that the physiologists and physicians have in their turn done very notable work on these problems. Pavlov, Cannon, Hurst, and Rehfuss, each of these, and many others have produced researches which place our knowledge on a sound footing, and an examination of their findings arouses in the mind of the critic the question, "What are the anatomists doing?" For it is very clear that these gastro-intestinal problems have reached a stage where far more precise knowledge is required. As an example, Mr. Mailer rightly calls attention to the modification which has lately occurred in our previous ideas concerning the acid control of the pylorus; but what, we may ask, is the nervous mechanism of pyloric action? Anatomists to whom the question is put will vaguely talk of the vagus and sympathetic nerves; pressed for more precise information they will say that each of these contains both motor and inhibitory fibres. And

[1] Robert Mailer: Edin. Med. Journ., 1922, xxviii., 114.

this is but one of the unanswered questions which confront us in later months when trying to harmonise the X ray appearance of the viscera with descriptions given in the dissecting room. It cannot, we think, be fairly urged that such questions regarding the function of anatomical structures are purely the province of the physiologist; had such an attitude been adopted by the great anatomists of the past little would be known to-day of the significance of all those minute ramifications of nerves and vessels, or the meaning of the small tuberosities and markings of bones, the elucidation of which has been the fruit gathered from the work of years. There has, we feel, been a regrettable tendency in anatomy schools of this country for many years to confine investigation to small embryological problems; the mass of precise knowledge which every student has to acquire makes it difficult for his teachers to escape from the purely pedagogic side of their duties. Conversation with junior demonstrators at schools of anatomy in Paris and Turin recently taught us that active investigation into problems such as we have indicated is there in progress; such questions are technically very difficult for the physiologist, they are of too academic a character for the surgeon, but surely we have still many anatomists who might approach them with enthusiasm and advantage.

SUBCUTANEOUS FIBROID SYPHILOMAS.

Dr. Howard Fox,[1] of the Department of Dermatology and Syphilis of the Harlem Hospital, New York, records a rare manifestation of late syphilis in a negress, aged 45, who presented other evidence of the disease in a circinate group of nodules on one arm and a very strongly positive Wassermann reaction. On both elbows and knees were extremely hard, painless, subcutaneous nodules which had appeared two years previously and remained unchanged during this time. They had no apparent relation to the bursæ. Histological examination of one of the lesions showed a dense fibrous gumma. In addition to the histological proof of their syphilitic nature, the lesions responded, though somewhat slowly and incompletely, to specific therapy. Dr. Fox alludes to two similar cases reported by Goodman and Young in the United States and by Parkes Weber in this country. The case also presented some resemblance to the rare condition of juxta-articular nodules which were first described by MacGregor and later carefully studied by Jeanselme, as occurring among the nations of many tropical countries, including Java, Siam, and especially tropical Africa. The lesions in these cases are round or oval, painless, generally multiple and symmetrically arranged, and of a board-like hardness. They have, however, no relationship to syphilis, tuberculosis, or xanthoma, and microscopical examination fails to reveal their nature, but Davey regards them as a late manifestation of yaws. They may reach the size of a small orange, contain no fluid, and in rare instances disappear spontaneously.

AUTOGENOUS BLOOD RE-INFUSION IN RUPTURED ECTOPIC GESTATION.

SINCE Thies, in 1914, introduced the re-infusion of blood from the peritoneal cavity into the vein of the patient in cases of ruptured ectopic gestation, the method of re-infusion has been tried by many surgeons, but chiefly during the war for hæmothorax. From Töpler[2] we have a report of autogenous blood re-infusion in 24 cases of ectopic gestation, without a death, the mortality in the same clinic before the method was introduced being 5·7 per cent. The cases chosen for the treatment were those showing signs of severe internal hæmorrhage with collapse and air-hunger, and with a history of recent rupture. Cases of slight hæmorrhage were treated with saline infusion only, and are therefore not included in this series, while those showing signs of infection or toxicity were not treated by blood infusion. In the 24 cases the rupture occurred at about the sixth week of pregnancy, in 22 cases a ruptured tube was found, and in two cases an intraperitoneal pregnancy. Nineteen cases were operated on within 24 hours of rupture, two on the second day, and three cases gave a longer history. On opening the peritoneum, the tube was clamped, and the blood ladled out and passed through eight thicknesses of muslin into an Erlenmeyer flask, where it was diluted with an equal quantity of saline, and kept at body temperature until a vein was ready for infusion. The infusion took from 10 to 40 minutes. The blood was neither defibrinised nor citrated. The average quantity infused was 520 c.cm. infusions, ranging from 150 to 900 c.cm. In all the 24 cases no untoward effects from the infusion, and no indication of destruction of corpuscles, emboli, &c., were observed. The average length of stay in hospital was 20 days, which was shorter than most cases not treated with blood infusion.

[1] American Journal of Dermatology and Syphilology, February, 1922.

[2] Deutsche medizinische Wochenschrift, Jan. 19th, 1922.

MEAT INSPECTION.

THE Ministry of Health has displayed commendable zeal in giving effect, by means of a circular letter and memorandum, to the recommendations of the Monro Committee on Meat Inspection. The recommendations of this Committee are generally approved by the Minister, but only a few are the subject of official reference. Possibly the restraining effect of the necessity for obtaining new powers from Parliament has been the deciding factor. The suggested system of meat marking, which received the unanimous approval of the Committee, is not referred to in the present official circular. The memorandum deals with meat inspection proper, and, whilst containing nothing repugnant to the recommendations of the Royal Commission on Tuberculosis of 1898, with one exception—namely, the standard of condemnation to be observed in the case of pig carcasses affected with tuberculosis—it elaborates what were previously broad principles by setting out in considerable detail the whole subject of meat inspection. This was obviously necessary in view of the fact that inspectors interpreted these principles differently. Viewed as a whole, the chief result will be to regard carcasses affected with tuberculosis in a somewhat less stringent manner than rigid adherence to the principles previously laid down might have deemed to be desirable. It will appear that generalised tuberculosis will be considered more from the standpoint of evidence of recent or remote infection.

The memorandum sets out the obligations of those slaughtering, and suggests that the offal of slaughtered animals should be detained until inspection can be arranged. This will prove of great value to inspectors who have to visit detached places and have not the advantage of a central hall. Concentration of slaughtering by the establishment of public abattoirs is not recommended, probably on account of the capital expenditure which would be necessary. The practice of concentration which obtained during the war is advised, and this appears a sound experimental compromise, the development of which we shall watch with interest. Ante-mortem inspection is, of course, almost impracticable without concentration, but the suggestions made under this heading will be of value if only because official recognition is now given here. Uniformity of standard is aimed at both in respect of the amount of meat inspected and the standard of judgment displayed. To assist in this direction the qualifications of inspectors receive attention, and expert inspectors working over a large area are suggested to assist lay inspectors who work in the smaller districts. A lay inspector should be competent to recognise that a discovered abnormality requires a person of greater pathological knowledge than he

possesses to decide whether the carcass may be passed for human consumption. It is hoped that the county authorities will assist in this connexion.

The memorandum and circular should prove of great advantage to local authorities, to inspectors, and to the meat trade, and we hope that when more settled times arrive the other recommendations of the Committee will not be forgotten.

HOSPITAL ADMINISTRATION AND THE VOLUNTARY PRINCIPLE.

A CONFERENCE of representatives of honorary medical staffs of voluntary hospitals in England and Wales, summoned by the British Medical Association, was well attended at the Wigmore Hall, London, on March 22nd. The chair was taken by Sir James Galloway, who was supported by Dr. R. A. Bolam, chairman of the Council of the Association, and Mr. Bishop Harman, chairman of the Hospitals Committee. The purpose of the meeting was to receive the report of that Committee, which was recently analysed in our columns, and this was done practically without dissent; but a long and interesting debate ensued on the proposition that the essence of the voluntary hospital system, whose maintenance had been agreed upon as desirable, "is the independent and voluntary management, and that this is not necessarily related to the conditions of service of the medical staff." The meaning of the proposition is clearly that in certain circumstances the medical staffs can receive payment without altering their own status as honorary officers or that of the hospital as a voluntary institution. This, which would have seemed a proposal derogatory to the medical profession a generation ago, is now a question of practical politics in the administration of hospitals, and was treated as such. The wide range of localities from which the conference was drawn made the debate valuable, for in certain districts the conditions of hospitals have been much more profoundly altered by the reception of paying patients, either in part or whole, than has been the case in other centres. All aspects of the question were put forward by speakers from personal knowledge, and a proposal was finally accepted that the formation of staff funds was legitimate, the fund not necessarily being formed from the surplus of sums paid for the maintenance of patients. This is a very far-reaching decision, and one which, for a time at any rate, may be distasteful to many members of the medical profession; but it is far better that the work of the voluntary hospitals should be carried on by the medical profession under some common plan—the adoption of which will always be optional in any particular institution—than that hospitals in one part of the country should resort to a policy which in other districts is regarded as a violation of the voluntary principle.

Dr. C. Lovatt Evans has been appointed to the Chair of Physiology at St. Bartholomew's Hospital Medical School, in succession to the late Prof. F. A. Bainbridge.

Mr. C. A. Pannett has been appointed Director of the Surgical Unit at St. Mary's Hospital, and Professor of Surgery in the University of London.

Prof. P. Duval, on Tuesday last, delivered an Advanced Lecture in Medicine, under the auspices of the University of London, at the Royal Society of Medicine. A good audience heard from him a highly instructive address on the Range of Intrathoracic Surgery.

THE Royal Commission on Oxford and Cambridge, appointed in November, 1919, under the chairmanship of Mr. H. H. Asquith, to consider the desirability of State assistance, has just brought in its report, which recommends an annual grant of £110,000 each to the two universities. £10,000 of this is marked in each case for the university library, £4000 for women's education, and £6000 for extra-mural work.

VENEREAL EXPERIENCES IN FRANCE OF THE NEW ZEALAND FORCE.

BY ETTIE A. ROUT,
LATE HON. SEC., NEW ZEALAND VOLUNTEER SISTERS.

THE Overseas Dominions will some day realise the profound debt of gratitude they owe to THE LANCET, not only for its enlightened and impartial attitude of mind towards the medical prevention of V.D., but still more for the illuminating series of reports it has furnished from time to time regarding the efforts of foreign countries. The report published in THE LANCET for Feb. 11th, 1922, pp. 292, 293, on the proceedings at the nineteenth annual meeting of the German Society for Combating Venereal Disease corroborates in the main the experiences of the overseas medical services during the war, but there are a few comments which might usefully be made here, some of them being passages in the report which I quote:—

1. *Protargol preparations.*—Protargol jelly, packed in metal collapsible tubes, proved at times unstable and inert; it was liable to cause irritation; and protargol stains the underclothes.

2. *Condoms.*—These proved unreliable by themselves. They were apt to break, and men sometimes infected themselves during removal of the condom. The claim that the condom "confers reciprocal protection" is unconvincing.

3. "Metchnikoff's calomel ointment has fallen into general disrepute." It may be regarded as particularly unsuitable for women.

4. "Forty per cent. quinine ointment holds a high position in Germany." Possibly this is because it is popularly believed to have a contraceptive value.

5. Prof. Blaschko appeals "for the simplification of prophylaxis, and for the adoption in general use of only one preparation which should at once be cheap, easily obtained, portable, not subject to decomposition, and easily applied." The single-treatment tube of ointment based on Metchnikoff's formula furnished a partial solution of this problem. When thymol was added (as in British Army tubes) the ointment sometimes proved intensely irritating. When camphor and phenol were added, the same thing happened, one or other substance being in surplus, and the substances apparently tending at times to separate out. The 33 per cent. calomel ointment was useless to protect against gonorrhœa if used *only* after connexion. Its use was advised both before and after.

6. Inquiry into the effectiveness of different preparations is advised in the report, and is certainly needed. Probably the formula most likely to prove suitable and acceptable in various ways is the one suggested by Surg.-Comdr. Hamilton Boyden, R.N. —Chinosol (or substitute) calomel-cream. Chinosol is a powerful antiseptic, but is non-irritating and does not stain the clothes. Further inquiry is needed to prove its efficacy, and the simplest and best modes of application.

Experience of the New Zealand Forces.

I may here state what was the actual experience in France of certain preparations and procedures employed by the New Zealand Forces.

We found considerable quantities of 10 per cent. calomel ointment were being used by women as well as by men; but the general French practice was to use vaseline beforehand, and urinate and use soap and water afterwards. This should give protection against multiple connexions and it is mainly here that disease results.

Aqueous solutions of pot. permang., &c., were of service, but there was a great tendency to use them too strong. "Enough crystals to cover a sixpence for a tumbler of water" was the frequent direction, but this sometimes causes blisters. It was found safer to recommend the 2 gr. tablet in a glass of water. Throwing crystals into the tumblerful of water and quickly stirring with a pencil, meant that the fine

crystals floated on the water, were gathered up on the swab and transferred to the genital organs: result, disinfection—and blisters. When the next risk was run, the blisters might break and infection might occur. Apart from this, aqueous solutions are not readily portable, and few men can be relied upon to use them efficiently after *each* connexion unless very carefully and confidently instructed.

Tubes.—We tried gelatin capsules, but discarded them as too "squashy" and because the elongated nozzle was liable to become dirty before use. The wax-filled tube, to be opened with a pin, was rather a delusion, because the pins were lost. The contents were then squeezed out of a corner of the base-seam, and the sharp edges of the metal in the hands of a semi-intoxicated or careless man might cause damage. The screw-cap tube was better, but the screw-thread was not altogether safe. We thought of using expanded metal caps for the tubes, but were not able to secure these during the war. The double-filled tube was excellent in theory, but somewhat disappointing in practice, because many men used the top or bottom filling indifferently for external or urethral application.

Sales of tubes should be controlled by the Public Health Department. A standard tube should be agreed upon for the whole country concerned, and none other should be sold, while authorised printed directions should be securely pasted on the tube, as is done for the American forces in Germany. Sales should be effected through chemists and druggists, but automatic machines in public lavatories, &c., will certainly prove of great value outside ordinary shop hours, and they help to secure that privacy of distribution on which success largely depends.

Ablution centres proved most valuable in lessening disease, and under civilian conditions depôt-disinfection and self-disinfection are complementary. The most important function of the ablution centre for civilians is undoubtedly "the teaching of personal prophylaxis," as Prof. Blaschko points out.

Women are disinclined to apply personal prophylactic measures unless taught that these measures are also contraceptive. For women a suitable soluble self-disinfecting-contraceptive pessary should be evolved, as being easier to apply than ointment, and more suitable in the absence of sexual toilet apparatus. The success of prophylactic measures is largely dependent on responsible personal instruction. It is not enough to provide disinfectants without instruction, nor instruction without disinfectants. Nor can any great measure of success be achieved without reasonable compulsory notification and treatment for men and for women, and the effective medical supervision of prostitutes: otherwise diseased women will certainly succeed in contaminating men faster than the men can themselves be instructed.

The most advanced efforts in personal prophylaxis are being made not in Germany but in America, particularly in Pennsylvania, under Dr. S. Leon Gans, Director of the Division of V.D., Pennsylvania Department of Health, working in coöperation with the United States Public Health Service. On Jan. 30th a series of circulars were issued by Dr. Gans, from which the following quotations are taken:—

"We are writing you that you may help in the lessening of venereal disease by telling those who do not know that these packets are to be had at low cost; only those should be used, however, having on their label the approval of the Department of Health. These are harmless and efficient."

"The State Department of Health has approved not only the contents but the *idea* represented by the personal treatment prophylactic packet. This because in many instances an arrest of infection will result. *It is better to prevent syphilis and gonorrhœa than to have to cure it.*"

"The self-treatment packet obtainable at drug stores to arrest venereal infection *after exposure* is approved by the State Department of Health on the same principle as is antitoxin given to diphtheria contacts. Proof is lacking that the use of this packet lowers social standards. Reduction in the incidence of venereal disease is a direct result."

"The Department neither condones nor approves promiscuous activities. Considering present conditions, facts, however, must be faced."

The following is a copy of the circular sent to all druggists in Pennsylvania:—

"You have had a communication from this Department regarding 'Immediate Treatment' package, otherwise known as a preventive against venereal disease. The prompt use of this packet will reduce disease incidence. Will you use legitimate methods at your disposal for the proper retail marketing of those various packages *which have the laboratory approval of the State of Pennsylvania upon them?* It is gratifying to note how thoroughly coöperative the pharmacists have been in the matter of voluntarily discontinuing the sale of venereal disease nostrums. Your continued interest is requested."

(Signed—By direction of the Commissioner of Health.)

In the U.S.A. and in the Overseas Dominions and elsewhere, public effort is gradually being correlated and systematised to ensure the proper legal and medical control of V.D., the primary condition of success being the complete separation of the moral from the medical aspect of the problem.

London, March 12th.

HEALTH REPORT OF THE ROYAL AIR FORCE FOR 1920.*

II.—DISEASE AND INJURY IN DIFFERENT TYPES OF UNITS AND TRADES IN THE ROYAL AIR FORCE DURING 1920.

APART from the detailed nosological tables of sickness published in the Report on the Health of the Royal Air Force for the year 1920, further figures of disease and injury are given separately in the report for different types of units, and for the different trade groups. Individual unit sickness is not discussed, owing to the comparatively small numbers involved—e.g., the average strength of a Royal Air Force squadron does not exceed 200 all ranks and is in many cases considerably less. Detailed statistics based on such numbers as these would be, to all practical purposes, valueless.

The table on page 10 of the report deals with disease and injury among the different types of units, and gives the strengths involved, ratios per 1000 of average annual strength for cases, death, invalids, and constantly sick, as well as the average duration in days per case. Separate rates are given at home, and abroad where the type of unit is also represented there. Thus, squadrons, store and repair depôts, and administrative units have their prototypes overseas. Airship stations, personnel depôts, experimental and design establishments, flying schools and ground schools were not in existence abroad during 1920. A further table on page 12 of the report analysing the comparative case-rates of the preceding table, shows the relative proportions of disease to injury among the unit-types involved.

The force, as a whole, shows a proportion of disease to injury of approximately 6¼ to 1, the figures for the force at home being 6 to 1 and abroad 7 to 1. This appears at first sight to be inconsistent with the amount of disease reported abroad during 1920, the actual case-incidence ratios per 1000 of average annual strength of disease alone being 399 at home and 840 abroad. Further scrutiny of the table, however, shows that, in addition to the higher disease-rates abroad, there is also a distinct increase in injury-rates from 68 for the force at home to 118 abroad. One would be inclined to think that although disease-as opposed to injury-rates might naturally be expected to be higher overseas, injury-rates, irrespective of climate, would not show much variation.

On consideration, there are at least three factors which can be put forward as a possible explanation of the higher injury-rates abroad.

* Report on the Health of the Royal Air Force for the Year 1920. To be purchased through any bookseller or directly from H.M. Stationery Office at the following addresses: Imperial House, Kingsway, London, W.C. 2, and 28, Abingdon-street, London, S.W. 1; 37, Peter-street, Manchester; 1, St. Andrew's-crescent, Cardiff; 23, Forth-street, Edinburgh; or from Eason and Son, Ltd., 40 and 41, Lower Sackville-street, Dublin. Price 6*s*.

(*a*) Exigencies of active service.

(*b*) The increased liability to infection from trivial abrasions and wounds in the tropics, necessitating admission of cases to sick quarters or hospital abroad, unnecessary in the corresponding type of case at home.

(*c*) In a force showing disease-rates abroad more than double of those at home, it is to be expected that trivial injuries abroad will in many cases not yield to treatment so readily as at home.

Personnel depôts, although only existing at home, show by far the highest proportion of disease to injury at 11¾ to 1 and also the highest total sickness-rate. There was an abnormal factor at work during 1920, partially accounting for this, which should not occur during peace conditions in future years—namely, the presence at the depôts of large numbers of men of low medical category awaiting discharge from the service on medical grounds. These men were concentrated at the depôts for the necessary medical examination, and completion of discharge documents. They were a war legacy which will not occur in normal years. The actual numbers invalided from the service, through the depôts, during 1920 were 3654, a totally abnormal figure. A table giving the medical reasons for discharge of these men is shown on page 48. These discharges are not included in the invaliding figures in the general tables of the report.

Turning to unit-types showing the least sickness, and excluding airship stations, which no longer exist, the lowest rates at home are shown in the type of unit which employs chiefly clerical and unskilled labour—namely, stores depôts and administrative units. Possible factors here are—

(*a*) A more sheltered life, which may tend to a decreased disease-rate, and

(*b*) The absence of liability to the various risks of the skilled trades dealt with later, these risks being a material factor in the causation of injury in the Royal Air Force.

Unit-groups at home showing the lowest proportion of disease to injury, are squadrons (3¼ to 1), experimental and design establishments (4¼ to 1), flying schools (4½ to 1). These units are concerned essentially in flying, but it must not be assumed that the greater proportion of injury shown in them is due to flying alone; there are many other risk factors to be considered—e.g., propeller accidents, starting car accidents, and accidents among skilled trades while at work, all of which apply to these units in particular. Their proportion of skilled trades is also larger on the whole than in the remaining units of the Royal Air Force.

An abbreviated nosological table, classified by trades, on page 14 of the report, shows the number of cases, invalids, and deaths per 1000 of strength in each branch or trade and for the total force. Without discussing the more common disease-rates in different trades during 1920, the groups which show the lowest disease-rate compared to the rate for the total force (475 per 1000 of average annual strength) are the officer group (311); boys (383); aircraft hands (410); and clerks (458). The figures shown for boys are not, however, comparable with the remainder, as there were practically none serving overseas during the year. The remaining groups, comprising carpenters, riggers, drivers, fitters, metal-workers and other skilled trades, all show a disease-rate above that for the total force, the highest rate being found among "other skilled trades" at 637 per 1000 of average annual trade strength.

It is rather difficult to understand why the trade groups showing a disease-rate above the normal should be comprised of the technical skilled trades, but there are two possible contributing factors.

(*a*) The proportion of these trades in the Royal Air Force overseas is, on the whole, higher than at home.

(*b*) Individuals in these trades, provided that they are capable of satisfactorily performing the duties of their trade, are retained in the Royal Air Force, although their physical condition would not necessarily be up to the standard required for unskilled labour, and this also applies to a less extent on entry to the force. This would naturally tend to a higher case-incidence rate among them.

The injury-rate for the total force during 1920 was 76 per 1000 per annum. Lower rates than this are found among boys (31), clerks (56), aircraft hands (59), metal workers (59); those exceeding it are carpenters and riggers (82), the officer group (83), other skilled trades (97), fitters (107), drivers (114). Here the influence of the occupation followed is beginning to emerge, and is dealt with in detail below.

The proportion between lower and upper extremity injuries is roughly 2 to 1. The only groups in which injuries to the upper extremity exceed those of the lower being the driver group. The consideration of the causation of injury in the Royal Air Force as a whole will throw some light on this.

The average death-rate from injury for the total force was 2·4 per 1000 of average annual strength. All the groups show a death-rate below this figure, with the exceptions of the officer group, which shows a death-rate of 12·2 per 1000 per annum and metal-workers 2·6 per annum. Flying accidents accounted for more than two-thirds of the death-rate among officers. Table 6 on p. 18 of the report gives in detail the injuries sustained from different causes during the year.

1. *Flying Accidents.*

Of the 71 cases shown, 39 occurred in the United Kingdom and 32 overseas, resulting in 14 deaths at home and 15 overseas. Ten out of the 11 cases of invaliding were due to flying accidents prior to 1920. Fifty-six of the 71 cases occurred in the officer group, of which 33 were at home and 23 overseas, resulting in 15 deaths overseas and 9 at home (the 12 deaths in each case quoted in the report is a misprint). There was only one accident among cadets, which was not of a serious nature; and a single death occurred amongst N.C.O. observers.

The case incidence among officers and cadets was 21·0 per 1000 of strength, and the death-rate 8·5. Of the remaining 15 cases, 9 occurred among the fitter trade group, resulting in 3 deaths, representing a case incidence and death-rate of 2·0 and 0·7 per 1000 of strength. The remaining 6 occurred among the carpenter and rigger group (3, with 1 death), aircraft hands (2), and the metal-worker group (1). The case incidence and death-rate for the total force were 2·7 and 1·1 per 1000.

Owing to the shortage of clerical labour, the full returns of machine hours flown by units are not available for 1920. Assuming that the average mileage per hour's flying for a service machine is 95, the figures for the last seven months of 1920 in the United Kingdom show that for one fatal accident more than 300,000 miles were flown by service pilots.

The average duration per case was 63·1 days. This figure is high, owing to many cases which occurred in 1919 still remaining in hospital in 1920.

2. *Propeller Accidents.*

Accidents occurring whilst swinging propellers on starting aeroplanes were 25 in number, 18 of which occurred at home. Of the total, 15 occurred in the fitter trade group, representing a case-incidence ratio of 3·3 per 1000 of strength; 5 occurred among the carpenter and rigger group (1·9 per 1000 of strength); 2 among aircraft hands (0·4 per 1000 of strength). Four cases were finally invalided. The average duration per case was 44·9 days. These, however, do not comprise all accidents in connexion with propellers. Accidents have occurred through the breaking of a propeller in mid-air and consequent injury to personnel in the machine. Fingers have been amputated through an occupant standing up in the machine during flight and bringing his hand in contact with the propeller.

3. *Accidents Starting Motors.*

Of the 102 cases occurring, there were 59 cases of fracture of the lower third of the radius and 8 cases of sprained wrist. Five cases were finally invalided.

Two of the 36 cases in the fitter group were invalided, the case incidence per 1000 of strength being 7·9. Among drivers there were also 36 cases, representing a case-incidence ratio of 21·9 per 1000. This furnishes the explanation of the higher proportion of upper to lower extremity injuries in the driver group, to which previous reference has been made. There were no deaths.

The majority of the remaining accidents occurred among aircraft hands (10), officer group (5), other skilled trades (5). The average duration per case was 36 days.

The seasonal incidence is interesting, as from April to September there were 32 cases as compared with 70 in the colder months of the year. At home the figures were 55 in the cold months compared with 23 in the warm ones, and overseas 15 compared with 9. Factors are possibly :—

(*a*) Increased difficulty in turning the engine over in winter owing to the increased viscosity of the oil ;

(*b*) Coldness of hands, resulting in muscular incoördination ;

(*c*) The habit of priming in the winter to secure easy starting.

The majority of these accidents can be regarded as preventable, as they are usually due to holding the starting-handle with the thumb opposed to the fingers or advancing the magneto too far. Although a sprained wrist or Colles fracture is the common injury sustained, due to the direct impact of the starting-handle against the palm of the hand, other less frequent types of accident may occur—e.g., contusion or fracture of the arm above the wrist due to the handle swinging round and directly striking the limb.

4. *Motor Accidents other than those caused by Starting Motors.*

Of the 138 cases, 68 were motor-cycle accidents. Of the remainder, the majority were caused by accidents with lorries and tenders. Falls from lorries were the most frequent, and were mainly due either to the tailboard coming loose en route or to men sitting on the sides or tailboard. There were six cases of the same nature in tenders. Two cases of drowning occurred in Egypt under this heading owing to a lorry overturning and pinning down two men in a ditch on the roadside.

5. *Other Accidents on Duty.*

Two hundred and eighty-seven of the 394 cases occurred at home. The case incidence and death-rate was 15·2 and 0·4 per 1000 respectively for the total force. The average duration per case was 24·2 days. The number of cases, invalids, and deaths and equivalent ratios per 1000 of trade-group strength are shown in the following table :—

Branch or Trade Group.	United Kingdom.			Overseas.			Total.			Ratios of total accidents per 1000 of strength.		
	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.	Cases.	Invalids.	Deaths.
Aircraft hands ..	59	—	—	13	1	1	72	1	1	12·9	0·2	0·2
Boys	14	—	—	—	—	—	14	—	—	5·5	—	—
Carpenters and Riggers	37	—	—	17	4	—	54	4	—	20·5	1·5	—
Clerks	12	—	—	5	—	—	17	—	—	7·0	—	—
Drivers	24	—	—	16	—	—	40	—	—	24·3	—	—
Fitters	67	4	1	30	1	2	97	5	3	21·2	1·1	0·7
Metal Workers ..	20	—	1	9	—	1	29	—	2	15·1	—	1·0
Officers and Cadets ..	11	—	—	4	—	3	15	—	3	5·7	—	1·1
Other Skilled Trades	41	—	—	12	—	—	53	—	—	24·6	—	—
Unstated	2	1	—	1	—	—	3	1	—	—	—	—
Total	287	5	2	107	6	7	394	11	9	15·2	0·4	0·4

It will be noted that the highest proportion of injury occurred among carpenters and riggers, drivers, fitters, and other skilled trades. This is probably a consequence of the various trade-risks.

It must be remembered, however, that it is only a certain proportion of "Accidents on Duty" which actually occur at the trade itself. In the report for 1921 it is proposed to split up this group into actual trade injuries as distinct from those occurring in the ordinary course of duty in the Royal Air Force.

6. *Accidents Due to Athletics.*

This and the remaining group "Other Accidents" can be regarded as accidents common to the Royal Air Force as a whole, irrespective of trade. Athletic accidents account for 540 out of a total of 1270 from all causes and are the largest cause group in the Royal Air Force. Apart from two cases of drowning whilst bathing in the Tigris, there were no fatal accidents ; 385 out of the total of 540 accidents were due to football. Of the balance, athletic sports and previous training for them accounted for 49, boxing 31, bathing 17 (mostly cuts on the feet), cricket and physical training 15 each, gymnastics 13, the remaining 15 being due to other causes such as hockey, tennis, roller-skating, &c. The average duration per case was 16·8 days. There is a marked preponderance of lower to upper extremity injuries—namely, 365 to 91. The commonest injuries of all were sprain and synovitis of knee (149 cases) and sprained ankles (89 cases).

7. *Other Accidents Not Shown in the Table Include :—*

(*a*) Accidents off duty. There were 241 reported, of which 217 occurred at home. There were 2 cases of final invaliding, and no deaths. The case-incidence ratio per 1000 of the total force was 9·3, and the average duration per case 18·4 days.

(*b*) Accidents on leave numbered 30 with no resultant invalidings or deaths. The average duration per case was 34·4 days.

(*c*) Injuries to feet, mainly septic blisters and abrasions caused by pressure of boots, accounted for 64 cases with an average duration of 8·8 days.

THE MEDICAL USES OF RADIUM: REPORT BY THE MEDICAL RESEARCH COUNCIL.[1]

A LARGE quantity of radium, amounting to about 5 g. of the bromide salt, was entrusted by the Ministry of Munitions in 1919 to the Medical Research Council. In the first instance, this radium was placed in the charge of the late Mr. C. R. C. Lyster (to whose memory a generous tribute is paid in the report), Prof. W. S. Lazarus-Barlow and Prof. S. Russ of the Middlesex Hospital, for the purpose of a mass experiment the object of which was to see whether, in the treatment of malignant disease with gamma rays, better results would be obtained than with the smaller quantities in ordinary use. While the radium was at the Middlesex Hospital for this purpose, it was possible for a large number of experiments to be made upon animals, and the first 30 pages of the report deal with the experimental basis of the therapeutic work, with the actual mode of use of the radium and a detailed account of 168 cases of malignant disease coming under investigation. Treatment was carried out with the surgical support of Mr. T. H. Kellock, Mr. Sampson Handley, and Mr. C. H. S. Webb with the assistance of Dr. Helen Chambers.

Prof. Lazarus-Barlow reports on the histological changes produced in ten of the cases contained in the preceding pages and his paper is illustrated by eight micro-photographs showing some of the most marked changes seen in the neoplasms after the radiation to which they had been exposed. An elaborate study by the same author follows of the histological and other changes produced in animals when given big doses of gamma rays, the animals being frogs, rats, cats, and rabbits. These changes exhibit in a very clear manner the selective action of the rays and the differences in susceptibility of the various animals to the same variety of radiation. The article is illustrated

[1] Special Report Series, No. 62. H.M. Stationery Office. 5*s*.

by 19 micro-photographs selected to show some of the most striking changes met with. The possible modes by which these changes are produced are discussed by the author, and if in some cases good reasons are given for regarding them as secondary to the profound changes that occur in the blood, he is careful to point out cases in which this cause cannot fairly be invoked. In some instances it has been possible to correlate the histological findings with clinical symptoms, thus:—

"The diarrhœa, and particularly its mucous character, can be associated with the changes occurring in intestinal mucosa, the distension of stomach and gut by liquid and gas can be associated with changes found in the unstriated muscular coats, the excessive discharge of mucus from the mouth with changes observed in the tracheal and bronchial mucous membrane and perhaps with mucoid changes in salivary glands."

By arrangement with the Medical Research Council access may be had to the complete protocols of these animal experiments.

The next investigation recorded is by Dr. G. Morowoka and Sir Frederick Mott on the effects of the gamma rays upon the brains of the same 57 animals. Changes were found in the brains of the rats, the outstanding effect being a direct action upon the Purkinje cells of the cerebellum, in several cases a well-marked peripheral crescent of basophile substance being demonstrated in the admirable micro-photographs. When this was observed, the authors inquired into the mode of irradiation and found that the animals had been fixed in such a position that the side of the brain had been exposed to the radiation. The practical conclusion reached is that the central nervous system of the larger animals does not suffer to any great extent by large exposures to gamma rays.

Observations upon the changes produced in the bone-marrow of rabbits after prolonged exposures to the gamma rays were carried out by Dr. C. Price Jones; in every case the marrow of the femur was examined as the author had previously made cell estimates of the normal rabbit. Very marked effects were produced by the rays and these are given in detail for each animal. The author is very guarded in the explanation he has to offer to account for these effects, inclining rather to the view that there is white cell destruction, diminished or inhibited formation of granular leucocytes, and an exaggerated red cell production in response to the numerous hæmorrhages and the phagocytosis of red cells. Such considerations are obviously of importance in the therapeutic applications of gamma radiation.

The report concludes with a short article by Mr. G. A. Sutherland and Mr. L. H. Clark on the average range of β rays in different metals.

The impression conveyed by the report as a whole is that a great deal of work was done during the time that the radium was set aside for experimental investigations, work partly of a direct clinical nature and partly concerned with the whole complex of changes occurring in animal tissues when irradiated. We learn from the introduction to the report that this large quantity of radium has now been allocated to different centres in the United Kingdom mainly for the purpose of an organised scheme of radium treatment of malignant disease. These centres will find much help from this report in the information there given regarding the action of gamma rays upon cellular structures malignant and benign.

MANCHESTER AND VENEREAL DISEASES.—At a meeting of the Manchester and Salford branch of the National Council for Combating Venereal Diseases a unanimous resolution from the executive committee was considered, which stated that for financial reasons it could not carry on the work after the end of the September quarter, when the present offices would be given up. Formed in 1917, the year of the greatest activity of the branches was 1920, when 190 lectures were given. During its existence about 20,000 persons have attended the lectures. Salford Corporation has withdrawn its annual contribution, and the branch could not carry on with the Manchester contribution of £400 and the very meagre financial support obtained from the public.

A DYSENTERY EPIDEMIC: QUESTION OF WATER-SUPPLY.

WITHIN the last 30 years England has experienced three serious water-borne epidemics of typhoid: 1893 Worthing (1315 cases), 1897 Maidstone (1847 cases), and 1905 Lincoln (over 1000 cases). In the *Medical Officer* for Feb. 11th Dr. W. A. Murphy describes an outbreak of dysentery which took place in Mid-Glamorgan during the year 1921. Fortunately in this case while the incidence was high the mortality was low, but if the epidemic was caused by discharges from carrier cases it was merely happy fortuity that the "porters" carried dysentery and not typhoid.

The epidemic started about May 13th, 1921, and was of so explosive a character (700 cases occurred in the early stages of the outbreak) as to concentrate attention at once on milk- or water-supply. No milk-supply was found to be common to the infected houses and Dr. Murphy concluded that this source of infection might be dismissed from consideration. The scene of the epidemic lay in the Ogmore Valley, and can be roughly divided by the Ogmore River into a western and eastern area. The main water-supply is from springs and upland surface water at Nantymoel and is filtered, although not, it would seem, very efficiently. This water supplies the eastern area apparently exclusively and also contributes to the supply to the west. As regards the western area, a small area is supplied from an independent source (Gorwyl Spring), all the rest depending on the above-mentioned Nantymoel source, supplemented by an auxiliary unfiltered upland surface supply (Fairy Glen), and this was proved by topographical and bacteriological examination to be fæcally contaminated. The distribution of the cases was most significant from a causative point of view.

—	No. of houses visited.	No. of houses invaded.	Proportion of population attacked.
Western area	494	308 (62%)	578 (23%)
"Gorwyl" area (independent supply)	36	3 (8%)	3 (1·4%)
Eastern area	365	88 (24%)	133 (7·2%)

The three cases occurring in the Gorwyl area (independent water-supply) were school-children in attendance at a school supplied from the Fairy Glen source, and no case had occurred in the eastern area prior to May 20th, by which time the epidemic had become established in the western side of the town.

As regards rainfall, no rain fell from May 1st to 6th inclusive, and on the eight subsequent days the rainfall in inches was as follows: 0·86, 0·51, 0·03, 0·07, 0·14, 0·0, 0·0, 0·19.

Dr. Murphy points out that the conditions were such that if a specific pollution of the water sources occurred, the polluting material would be washed into the main during the rainy period following the dry spell. Of the first 327 cases none occurred prior to May 10th, 3 between May 10th and 13th, and the heaviest incidence, 50 per cent., of the earliest recorded cases occurred during the four days, May 12th to 15th, the figures being 28, 82, 24, and 24 on the successive days. From May 16th to 19th, the number of persons attacked was relatively high, 20 cases giving the date of onset as May 19th, there being 63 cases in all attacked between these dates. After May 19th there was a definite decline in the number of cases, the highest in any one day being 8.

The spread of the infection outside the western area is ascribed by Dr. Murphy to the close intercommunication existing between the two areas. He says that it was definitely established that personal contact was the means by which the infection was disseminated in the later stages of the outbreak. The disease was of a mild type though 15 deaths occurred. As regards the origin of the outbreak, Dr. Murphy concludes that the infection was water-borne, and that it arose from a specific contamination of one of the streams supplying the Fairy Glen intake.

Bacteriology.—The bacteriological investigation of the epidemic was carried out by the county bacteriologist. On May 24th he reported that the sera agglutinated *B. dysenteriæ* Flexner W. in dilutions of 1 in 200 and that he had isolated an organism with cultural characteristics resembling those of this organism, which was similarly agglutinated by the serum. During the outbreak 31 sera were examined (including 4 controls) and of these 18 agglutinated this bacillus in dilutions of from 1 in 100 to 1 in 1000. Twelve sera, including those of the 4 controls, were negative to *B. dysenteriæ* Flexner and Shiga. Four sera from ex-soldiers were examined, 3 giving a negative result and 1 gave a positive agglutination to *B. dysenteriæ* V., 1 in 50; W., 1 in 100; and Z., 1 in 50. Six specimens of stools were examined; from 2 *B. dysenteriæ* Flexner W. was isolated; 3 gave negative results, and from 1 specimen, an infant, a bacillus with cultural characters of Morgan's bacillus was isolated.

Conclusion.

The outbreak appears to be of some importance, assuming Dr. Murphy's contention that the disease was water-borne to be correct, it may be that we are being lulled into a position of false security as regards the safety of our water-supplies by our relative immunity from typhoid fever. Diarrhœa, in non-epidemic form, is always with us. Are we wholly justified in ascribing it uniformly to such temporary disturbances of the alimentary tract as are associated with milk and food supply and the abetting factors of personal contact, flies, and temperature? Whence came the causa causans in this particular case, and was its striking power dependent on excessive numbers, or exalted virulence? We could cite many instances of contaminated and unfiltered surface water-supplies which are now being used with apparent immunity. Apart from purification, how shall we seek to avoid the factor, or factors, which, almost in a moment, can render such supplies dangerous to health?

The Ogmore case merits further scrutiny and sustained reflection and it has probably already attracted the attention of the Ministry of Health. Meanwhile, we are pleased to note that another argument would seem to have been supplied to those who regard a pure water-supply as the foundation of sanitation.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Quick Diagnosis in Tuberculosis.

Prof. Calmette has made known the results obtained in his laboratory by Mr. H. Limousin with a special method of cultivation of Koch's bacillus which was first recommended by Mr. S. A. Pétrof in 1915. The method as now modified permits the direct isolation of *B. tuberculosis* from sputum with the possibility of a more rapid positive diagnosis than in the case of guinea-pig inoculation, growth being obtained between the eighth and fourteenth days. The culture medium of hen's eggs and veal is prepared according to the technique given in the annals of the Pasteur Institute for August, 1921. Sputum is collected in a sterile vessel and mixed with a strong solution of caustic soda (NaOH 1 part, aq. dest. 25 parts), the amount of soda solution to be added varying from two to four times its volume according to the viscosity of the sputum. The preparation, when thoroughly shaken, is placed in a thermostat at 37° C. for 30 minutes; it is then centrifugalised for 15 minutes; the whole of the supernatant fluid except a few drops is removed with a pipette; four or five drops of an aqueous solution of hydrochloric acid 1 in 25 are added; finally a little of the sediment is placed on Limousin's culture medium, the inoculation being performed in four or five tubes. Making use of this technique, pure cultures have been obtained in at least three tubes out of five. Positive results have been obtained with all specimens of sputum in which the tubercle bacillus had been detected by the classical method of experimental inoculation.

At a recent meeting of the Société Médicale des Hôpitaux, MM. A. Pissavy and R. Monceaux state that they have found that sputum from patients suffering from open pulmonary tuberculosis and gangrene of the lung contains tyrosin. They say that tyrosin cannot be detected in cases of non-ulcerated pulmonary lesions, and that the tyrosin-reaction disappears when the ulcerative process in the pulmonary parenchyma has subsided.

Dangers of X Rays.

Since you referred, a few months ago, to the scare promulgated by the Parisian popular press resulting from reports to the Academy of Sciences, which indicated that it may be dangerous to live in the proximity of X ray centres, it may be of interest to your readers to know that at recent meetings of the Académie de Médecine and of the Société de Radiologie Médicale de France, Dr. H. Béclère, Dr. J. Chevrotier, and Dr. H. Lumière have recommended a special kind of brick containing baryta for the construction of walls and floors of X ray rooms. The bricks suggested are of the ordinary standard dimensions; they weigh 1 kg. 500 g. and contain 1 kg of baryta. The findings of the ionometric tests of the "Laboratoire de Physique de la Faculté de Médecine" show that with the most penetrating X rays used in modern X ray plants more rays are absorbed by the thickness of a brick than by a lead shield 5 mm. in thickness. Other members of the Academy of Medicine have suggested that galena interposed between the two partitions of a double brick wall will be the most efficacious protection if ultimately still more penetrating X rays are used.

Bill Relating to the Obtainment of Bacterial Cultures.

A few months ago a murderer was found guilty of homicidal poisoning by administering to his victims bacterial toxins. Since then the public has shown some alarm at the fact that the law permits medical institutes and laboratories to hand over bacterial cultures to any person without special authorisation, or a special order signed by a medical officer. Mr. Géo. Gerald is putting forward a Bill to amend the law in this respect.

Congress of Dermatologists and Syphilologists.

A congress of French-speaking dermatologists and syphilologists will be held in Paris on June 6th, 7th, and 8th, 1922, under the patronage of the Société Française de Dermatologie et de Syphiligraphie. Members of national societies of dermatology and syphilology are invited to join the congress. Doctors who do not belong to such societies may be admitted to take part, but the approval of the committee of organisation is then necessary. Subscription fees are Fr.60. The congress meetings will be held at the Hôpital Saint Louis (Paris) at 9 A.M. and 2 P.M. on the three above-mentioned days. Mornings will be devoted to the presentation of patients and to communications. In the afternoons papers will be read on the following subjects: 1. Epidermomycoses (those of the scalp will be excepted); Reporter, Mr. C. Petges (of Bordeaux). 2. Venereal inguinal lymphogranulomatosis; Reporters, Prof. J. Nicolas and Mr. M. Favre (of Lyons). 3. Colloidal reactions in syphilis; Reporter, Mr. Guy Laroche. The heading of any propositional communication should be sent with a résumé before May 1st, and applications and subscription fees before May 15th, to Monsieur Hudelo, 8, rue d'Alger, Paris.

March 21st.

ALASTRIM IN SADDLEWORTH.—An outbreak of alastrim has occurred in the township of Saddleworth, on the borders of Yorkshire and Lancashire, where the chief industries are in wool and iron. Since Christmas there have been 65 cases occurring at different periods, and of these five occurred at the end of the third week in March. Other cases have occurred in Oldham also during the last few weeks. The recent cases have been sent to the Huddersfield Isolation Hospital.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Medical Permission for Marriages.

THE chief Board of Health of Vienna, which supervises the health of about 40 per cent. of the entire population of the republic, has come to an important decision concerning the institution of a form of medical licence for couples desiring to marry. Last year, at the suggestion of Prof. Tandler—then Minister for Public Health—steps were taken to ascertain the attitude of the bodies concerned towards the idea of certification of health before marriage. Compulsory certification had to be abandoned for numerous reasons; it was finally decided that the municipal board of health should appoint a specially qualified medical man to act as examiner of persons of both sexes, to certify their mental and physical fitness for marriage. The likelihood of healthy offspring is considered, and also any signs of tuberculosis, neurosis, general debility, or cardio-vascular disease in the applicant. The chief idea is, of course, to prevent persons suffering from syphilis, epilepsy, mental disease, and chronic alcoholism from marrying. If the examiner thinks fit, he will send the applicant to a specialist at a clinic; the latter will report not to the patient, but to the examiner, who will then be able to give his authoritative advice and issue a licence to marry. Examination will be free, for the first year or two at least, and it is hoped that many young people will avail themselves of the opportunity. Women in particular are expected to insist on the production of certificates by their intended husbands. If many women apply for examination a woman doctor will be appointed too. In order to popularise the institution, no compulsion whatever will be applied; reliance is placed solely on moral influence, by which in time it is hoped that the public will be educated up to the full significance of a contract of marriage. Absolute professional secrecy is, of course, guaranteed; no one but the applicant will be informed of the result of the examination. Advice as to treatment will be given if necessary. The official examiner has now been appointed at a salary of about 25,000 kroner a month.

The Status of the General Practitioner.

In a recent communication to the *Wiener Medizinische Wochenschrift* the attention of the public is called to the necessity of ensuring for the general practitioner a standard of income sufficiently high to relieve him of constant financial worry. The writer of the communication argues that practitioners should be evenly distributed throughout the country, and not permitted to group themselves too much in one place; he also emphasises the need for a distinct separation of the general practitioner from the medical administrator, public health official, or teacher. He therefore demands that whole-time appointments be made by local authorities; the holders of those appointments should not be allowed to participate in private practice, but should be paid on a scale admitting of a decent standard of comfort. He also suggests that the titles "professor," "privatdocent," "councillor," &c., be abolished by law in private practice. At present a medical man holding a professorship in some purely theoretical subject (e.g., medical history or forensic medicine) may use his title in general or special practice and charge accordingly. It is suggested that all hospital internes and assistants, all whole-time teachers and demonstrators, should also be debarred from private practice; only then, in the opinion of the contributor to the *Wochenschrift*, will professional competition be established on an ethical basis, whilst the population will be better served by medical men devoted wholly to private practice. At present, he observes, practitioners "hold" many appointments (e.g., as physicians to the Krankenkassa, to the police force, to the railway companies, &c.), but cannot be said to "fill" them.

Increase of Venereal Disease in Austria.

Venereal disease has long been much commoner in Austria than in Western countries. If the incidence in the armies in peace time be taken as an indication of the general distribution, it will be found that of each 1000 soldiers the following were the annual figures of men reported as suffering from venereal diseases: Prussia, 18; Bavaria, 20; France, 27; Belgium, 28; the former Austria, 61. This high rate was chiefly due to the Balkan and Magyar elements of the population, but even the Tyrol had a rate of 39 per 1000. The war resulted, as was to be expected, in a very marked increase of sexual disease. More than 12 per cent. of the rank and file at the front were suffering from venereal disease. Up to August 1st, 1917, 1,275,855 soldiers were reported as infected, and this figure must be regarded as a minimum. At the end of the war at least 33 per cent. more must be counted as diseased. Of these soldiers, 59 per cent. were single, 41 per cent. married; 15 per cent. came from cities, 31 per cent. from small towns, 54 per cent. from rural districts; when the war was over they returned home with their diseases. But behind the front, also, and especially in Vienna, a marked increase of sexual disease was observed during the war, chiefly amongst juveniles; the figures went up from 42 per 1000 to 111 per 1000 for males, from 129 per 1000 to 213 per 1000 for females. Amongst married women the number of infected persons went up from 10 per cent. in 1913 to 23 per cent. in 1918. Increasing demoralisation, infection by the returning husband, and social changes are responsible for this deplorable state of affairs, against which an energetic warfare is now being waged under the leadership of Prof. Finger, who compiled the statistics given above. The revolution occasioned a further rise in the figures; the demoralisation among young girls assumed alarming proportions. Police raids on the type of hotel where prostitutes are most frequently found, showed only 33 per cent. of the juvenile offenders to be infected in 1918; in 1919 and 1920 the figures were 46 per cent. and 48 per cent. respectively. Under such conditions these diseases are no longer merely "sexual"; they are "infectious," threatening the whole population like small-pox, cholera, or influenza. Prof. Finger justly points out that both, first, the present means of detaining the manifestly diseased prostitutes in hospitals, and, secondly, the regular control of those not in hospital, by weekly or more frequent examination, are rendered worse than useless unless the infected men are also rendered innocuous. He insists on the necessity of legislation in this connexion. An example has been set in this respect by the Scandinavian countries, where the effect is said to be most encouraging. A Bill will be shortly brought before the Austrian National Assembly, whereby police control of prostitutes will be suspended, but whereby persons found infected will have to submit to treatment. The Bill will not be limited as to sex, class, or occupation. If passed, this law, it is hoped, will act not only as a sanitary measure, but will provide for the establishment of care centres and for the spread of a sense of moral responsibility.

March 14th.

CZECHO-SLOVAKIA.

(FROM OUR OWN CORRESPONDENT.)

Sanitary Conditions in Greater Prague.

Dr. Ladislav Procházka, chief health officer of the city of Prague, has reported to the city council the results of his recently completed sanitary survey of Greater Prague, which came into existence on Jan. 1st, 1922, and now forms a city of approximately 700,000 inhabitants. The centre of the city as it now exists is well equipped with the prime necessities for a modern city, including good water-supply and sewage disposal; but in a number of

communities now attached to the city true rural conditions still persist. The general death-rate of the whole city is not less than 20 per 1000; infant mortality is as high as 230. The figure for typhoid, almost nil for the central city, will be greatly increased, as this disease is endemic in some of the new suburbs. Dr. Procházka explains these unsatisfactory conditions as follows:—The chief difficulty is that of situation, which makes Prague one of the prettiest cities in the world, but does not admit of sufficient ventilation of streets and public places. It lies in a curved valley of the Moldau, which fact accounts for the smoky appearance and atmosphere of the city. Housing conditions in the city are very unsatisfactory, largely on account of post-war conditions. Building has become very expensive, whilst great numbers of new inhabitants have flocked to Prague since it became the capital of a new State. Premises closed during and before the war on account of their unhygienic conditions are now being used, since the housing shortage has made any housing inspection illusory. As previously explained, the drainage system of the central city is good, and the water-supply admirable; but the added townships are largely supplied from wells, and only a small proportion of them have proper drainage. A lack of child-welfare activities explains the high figures of infant mortality; there is, indeed, a great need for social welfare generally, and for systematic public health education, and the general cleansing of the city must also be improved. Dr. Procházka declares that the city is now facing approximately the same problems as 30 years ago, when it was known as a focus of typhoid; at that time the authorities had courage enough to undertake the provision of good drainage and water-supply at the expense of about 70 million crowns, and the health officer hopes that the authorities of to-day will equally well interpret the needs of the city.

Annual Report of Students' Health Centre.

A year ago a health centre for students was opened in Prague, in the students' home established by the Y.M.C.A. as the gift of America to Czecho-Slovak students. There are 16,000 students now in Prague, including 13 different nationalities; the largest numbers are of Czechs, Germans, Jugo-Slavs, and Russians. Of the last-named there are no less than 1500 attending the universities at present. The board of directors of the Students' Health Centre recently held its first annual meeting, and received its first annual report. The medical director in charge of the centre is a specialist for tuberculosis; there is, in addition, a part-time specialist for venereal diseases. A public health nurse, who is also trained as a social worker, has charge of the arrangements for visiting students. Treatment is free for every student; the institution is supported partly by the State and partly by private gifts and collections. Of the 4052 students who applied for medical advice at the dispensary during the past year, 228 showed definite or suspected signs of tuberculosis; a large percentage of them were placed in sanatoriums through the agency of the Anti-Tuberculosis League or of the Czecho-Slovak Red Cross. Of the total number of patients, 1448 were of a nationality other than Czecho-Slovak. Despite the curious mixture of nationalities, no chauvinistic friction has been reported amongst the students.

March 14th.

PRINCESS ALICE MEMORIAL HOSPITAL, EASTBOURNE.—In the year 1921, despite the exercise of the greatest economy, the accounts show a deficit of £1663. At the annual meeting of the governors on March 17th Sir Charles O'Brien Harding, treasurer, said it was impossible to run the hospital on the amount of subscriptions received at the present time. Patients or their relatives were therefore being asked to help by giving something towards the cost of their stay in the hospital, and it was hoped material benefit would accrue to the hospital from the new arrangement.

Correspondence.

"Audi alteram partem."

A NATIONAL COUNCIL FOR MENTAL HYGIENE.

To the Editor of THE LANCET.

SIR,—There can be little doubt that the subject of mental health, using the term in its widest sense, excites the interest both of the public and of the medical profession more now than it has ever done before. The recent establishment of a few hospitals and clinics for the treatment of "functional nervous disorders," which might be more scientifically labelled "minor disorders of the mind," affords evidence of the fact that the early recognition and treatment of these maladies is generally regarded as a matter of importance in relation to the health of the community. There are, moreover, many societies and associations, old and young, which are engaged in promoting the study of mental disorders, the welfare of the insane, the problems of industrial psychology, and the various aspects of mental deficiency.

A provisional committee of medical men, of which I have been appointed chairman, has decided to form a central organisation, a National Council for Mental Hygiene, in order that the work of these institutions and societies should be encouraged to expand and to add to their usefulness by organised coöperation. Such a National Council for Mental Hygiene will be concerned with other matters, which have not yet received sufficient attention. It will help to establish psychological clinics at general hospitals for the treatment of early mental and nervous disorders. It will endeavour to make mental hygiene a more prominent subject in the education of medical students and, by instructing the public in the principles underlying mental health and illness, gradually diminish the enormous waste of time and energy in all classes of society, which now results from widespread ignorance concerning these questions.

The conservation of mental health is a matter of serious economic importance to any nation, and this has been fully recognised in other countries, notably in America, where a National Committee for Mental Hygiene has been doing valuable work for a number of years. The chief purposes of that committee are to work for the conservation of mental health; to promote the study of mental disorders, mental defects and delinquency in all their forms and relations, to obtain and disseminate reliable data concerning them, to help to raise the standard of care and treatment, and to coördinate existing agencies—federal, state, and local. These are ambitious schemes; but even a moderate amount of success would spell happiness and prosperity to many thousands of the population, who must otherwise fail in the struggle for existence. Great Britain must not be less ambitious and must be prepared to join with other nations in an International League, the objects of which will be to spread the knowledge accumulated by each of its members in all matters of mental hygiene.

The provisional committee consists of: Sir Norman Moore, President of the Royal College of Physicians; Sir Charles Sherrington, President of the Royal Society; Sir John Goodwin, Director-General of Army Medical Service; Sir George Newman, Principal Medical Officer, Ministry of Health; Sir Walter Fletcher, F.R.S., Secretary of the Medical Research Council; Dr. C. H. Bond, President of the British Medico-Psychological Association; Dr. Bedford Pierce, President of the Section of Psychiatry of the Royal Society of Medicine; Prof. George Robertson, President-elect of the British Medico-Psychological Association; Dr. C. S. Myers, F.R.S., Director of the National Institute of Industrial Psychology; Dr. G. Ainsworth; Dr. Helen Boyle; Dr. Edwin Bramwell; Dr. Farquhar Buzzard; Sir Maurice Craig; Lord Dawson of Penn; Sir Bryan Donkin; Dr. Elliot

Smith, F.R.S.; Dr. Edwin Goodall; Dr. Henry Head, F.R.S.; Dr. Crichton Miller; Sir Frederick Mott, F.R.S.; Dr. W. H. R. Rivers, F.R.S.; Sir Humphry Rolleston; Dr. T. A. Ross; Dr. Tredgold; Dr. W. Worth.

This committee will call a general meeting on May 4th, 1922, at the rooms of the Royal Society of Medicine for the purpose of deciding on the constitution of the National Council, of electing officers and other business. Meanwhile the honorary secretary will be glad to receive the names of all persons, lay or medical, who are interested in this movement and who would care to have more particulars sent to them. Communications should be addressed to the Honorary Secretary, National Council for Mental Hygiene, 51, Green-street, W. 1.

I am, Sir, yours faithfully,

March 27th, 1922. COURTAULD THOMSON.

THE MEDICO-LEGAL SOCIETY.

To the Editor of THE LANCET.

SIR,—The Council of the Medico-Legal Society has agreed that the time has arrived for the Society to have its own library, and arrangements have been made for this at the place of meeting, 11, Chandos-street, Cavendish-square, W. 1. Members of the Society are cordially invited to present books on medico-legal subjects to the library, which will be acknowledged and duly catalogued. They should be sent to the librarian of the Medico-Legal Society at the above address. Arrangements are also being made for members to have free access to the library at convenient hours.

We are, Sir, yours faithfully,

J. R. ATKIN,
President.
R. HENSLOWE WELLINGTON,
B. H. SPILSBURY,
Members of the Library Committee.

March 25th, 1922.

COMBINED METHODS IN THE TREATMENT OF CANCER.

To the Editor of THE LANCET.

SIR,—In the course of the interesting correspondence on this subject in recent issues of THE LANCET, Dr. J. H. Douglas Webster and Dr. F. Hernaman-Johnson have emphasised the necessity for coöperation among the specialists who attack the problem of the cure of cancer. Dr. Webster sums up his letter thus:—

"More than any partisan rivalry between surgery, radium, and X rays will an active co-partnership—with constant reference to all the other viewpoints, physical, pathological, and biochemical—be likely to lead to success in the final understanding and control of cancer."

The omission of the psychologist from the team is the point to which I desire to draw attention. It is agreed that the capacity of the patient to react in the direction of health is the factor which limits the effective action of each member of the team; the greater this capacity, the more thoroughly can surgery and radiation be applied to the task of extirpating the new growth. And whatever the physico-chemical mechanisms of the protective tissue-reaction may prove to be, there can be little doubt that mental comfort—the goal of the medical psychologist—is a dominant factor in the production of immunity, in this as in other varieties of biological attack upon the tissues.

In the course of psychotherapy, undertaken not for the cure of cancer but for the comfort of the cancer patient, the improvement in the strength and general condition of the patient on the cessation of mental conflict is an arresting phenomenon. The cancer patient is pre-eminently subject to mental stress and conflict of a severity sufficient to account for a very large part of the pain and debility which are commonly present; but he is very rarely encouraged to "face facts" and to solve his conflicts until all hope of his recovery has been abandoned. This letter is a plea for the admission of the psychologist to the team at the outset of treatment, on the grounds that (1) he can enable the surgeon and the radiologist to act more promptly and more thoroughly than is usually possible when the patient is not helped to face the facts of his position, and (2) that his influence has a directly curative effect, and may therefore tend to lessen the incidence of secondary deposits.

As Dr. Hernaman-Johnson remarks, "Nature does not recognise specialties." Nature treats the cancer patient—his body, his mind, and his neoplasm—as one problem. It is no easy problem, and we are not likely to solve it if we neglect an essential part of it.

I am, Sir, yours faithfully,

J. NORMAN GLAISTER

New Cavendish-street, W., March 25th, 1922.

*** A similar plea has been received from Dr. Haydn Brown.—ED. L.

THE TREATMENT OF ADENOIDS:

A RESOLUTION BY THE COUNCIL OF THE SECTION OF LARYNGOLOGY OF THE ROYAL SOCIETY OF MEDICINE.

To the Editor of THE LANCET.

SIR,—In view of the great number of children requiring operations for the removal of tonsils and adenoids, and of the varying standard of the provision made by hospital and local education authorities for such operations, the Council of the Laryngological Section of the Royal Society of Medicine, after careful consideration, desire to make the following suggestions:—

(1) That all clinics, whether at hospitals or schools, should be in the charge of surgeons with special experience of diseases of the nose, throat and ear, so that, inter alia, a wise selection may be made of cases requiring operation, and others not requiring operation may be appropriately treated.

(2) That all patients requiring operations for tonsils and adenoids should have in-patient institutional treatment, and that a stay of at least 48 hours should be insisted on, and a further stay if thought advisable by the medical officer in charge.

(3) That parents should be given printed instructions as regards the preparation of the patient for operation, and of the room to which the patient will return.

(4) That before the patient is admitted for operation inquiries should be made by a responsible authority, as to the home conditions and circumstances, especially with reference to the presence of infectious disease.

(5) That when the patient leaves the hospital printed instructions with regard to after-treatment should be given (as per scheme appended).

(6) That anæsthetics should be given by anæsthetists with special experience of these operations.

(7) That after the patient leaves the hospital with the printed instructions for after-treatment arrangements should be made for the supervision of a qualified visiting nurse.

The Council were of the opinion that where it is impossible in large cities to provide hospital accommodation for all the cases, the provision of open-air buildings near the city, adequately equipped for operative treatment, would offer many advantages. These would be specially useful in connexion with school clinics. Until such provision of adequately equipped in-patient clinics can be arranged, and where it is not possible to keep every child in hospital for 48 hours after operation, and the child is operated on in an out-patient department, the Council recommend that several further conditions should be fulfilled:—

(1) That printed instructions should be given to the patient with regard to preliminary preparation, and investigation should be made beforehand—e.g., by a "care committee" or a visiting nurse—as to the adequacy of the home accommodation and supervision, and also the absence of adverse sanitary conditions, risks of contagion, &c.

(2) That proper waiting-room accommodation should be provided for patients before operation.

(3) That the recovery room should be scrupulously clean, warm, and well-ventilated, and provided with separate beds or couches for each patient.

(4) That patients should be detained in the recovery room until pronounced fit to leave by the surgeon in charge or his deputy.

(5) That the recommendation that the child should be visited by a nurse after discharge from the hospital should be insisted on with even greater force in the case of children who are denied the safeguards of in-patient accommodation.

(6) That every child who is sent home on the day of operation should be transferred by an ambulance or hired conveyance. Travelling by public tram, bus, or train so shortly after operation is most undesirable, and a source of distress and often of infection.

We are, Sir, yours faithfully,

W. MILLIGAN,
President of Section.
WALTER G. HOWARTH,
T. B. LAYTON,
Secretaries of Section.

March 22nd, 1922.

A TONSIL AND ADENOID INQUIRY.

To the Editor of THE LANCET.

SIR,—During the last two years the school medical service of Derbyshire has been responsible for some 3000 enucleations of diseased and enlarged tonsils, and in view of the recent press campaign against this work I have made some special inquiries which are given in my report to the Education Committee for the year 1921.

Although we are doing this work, and doing it well, I cannot help thinking that we are not going far enough back. We ought, with the organisations we have in the school medical services of the country, to find out why we now have so many children suffering from diseased tonsils and excessive adenoid growths, and I should be extremely grateful to receive suggestions as to the inquiries that should be made of the history of children suffering from these conditions.

In the county of Derbyshire we have a population of 100,000 living on clay and alluvium, in the latter the subsoil water being close to the surface. We have a population of 200,000 living on coal measures, where on account of the coal pits the sub-soil water has been drained away. We have another large population living on the mountain limestone. As to elevation, we have about 20,000 living on alluvium about 90 feet above sea-level. We have about the same population living over 1000 feet above sea-level. We have a staff of over 50 health visitors who can visit the homes and obtain for us accurate information as to the habits of the people, as to whether they sleep with their windows open or not, and how the children have been fed. We also have a skilled pathologist and an excellent laboratory, where any bacteriological examination of the enucleated tonsils can be made.

In undertaking an investigation of this kind I should welcome criticism, so that any errors of omission can be corrected before starting.

I am, Sir, yours faithfully,
SIDNEY BARWISE.

Medical Inspection Department, New County Offices, Derby, March 20th, 1922.

The inquiry form proposed by Dr. Barwise contains the following headings:

(1) Age weaned.

(2) How fed (with reference to excess of carbohydrates).

(*a*) From weaning till two: (i.) Milk; (ii.) dried milk; (iii.) carbohydrate; (iv.) mixed bad, mixed good.

(*b*) From two to four.

(3) Did child have carious teeth? If so, at what age?

(4) Was the child, for the first years of life, insufficiently clad, especially about the lower limbs?

(5) Does child sleep with bedroom window open?

(6) When did symptoms of enlarged tonsils and adenoids begin?

(7) Did child have frequent colds before adenoids were suspected or did constant colds follow the adenoids?

(8) Is the child free from constant colds?

(9) What symptoms, if any, are caused by the enlarged tonsils and adenoids—e.g., deafness and mental dullness?

(10) History of heredity.

(11) Previous illnesses.

Home Conditions.—Is the house damp? If so, cause of dampness.

ADENOIDS AND THE COMMON COLD.

To the Editor of THE LANCET.

SIR,—In an article on the essential causes of adenoids and the association of that condition with rickets, published in THE LANCET of Nov. 12th, 1921, I endeavoured to show that adenoids are the expression of an overworked condition on the part of certain aggregations of lymphoid tissue. The sterilisation of the inspired air is in all probability, in part, one of the functions of tonsils and adenoids and their secretions. But their principal function, one which it is the object of this letter to emphasise, is to arrest and destroy the pathogenic micro-organisms which constitute the essential ætiological factors of a large number of diseases. Their protective influence saves us from a large number of illnesses, and there are strong reasons for believing that they have much to do with the acquirement of immunity. As it is probable that the essential cause of each of the diseases comprised in the term exanthemata is in each disease a particular organism, and the same holds good of many other complaints, it follows that immunity towards these diseases is readily acquired. A large proportion of children escape the exanthemata altogether, many suffer from one or more of these infectious diseases and have been rendered immune.

In respect to a common infectious cold, the conditions are different. Whilst the same defensive arrangements are in active operation, here we have to deal with a complaint due to a variety of different micro-organisms. It is probable that the number of organisms constituting the active causative element of acute naso-pharyngeal catarrh are very numerous. Symptoms of catarrh attend many of the exanthemata, and it is surely reasonable to suspect that many of the organisms as yet unnamed, found in the air and entering the body by the nose, are active agents in producing that group of symptoms known as a cold; and that in the exercise of the function of the subepithelial glands guarding the chief portal and avenue of entrance to the body, catarrh is produced. In most instances the arresting, disarming, and destroying functions of the lymphocytes are exercised so promptly and effectively that little or no evidence of disordered function is apparent to the individual, but when the opposing forces are more equally balanced there are symptoms of congestion or inflammation. The increased secretion of mucus, together with damaged lymphocytes, injured and deceased organisms, constitutes the catarrhal secretion. The commonest symptoms and sequelæ of adenoids are recurring colds. The brunt of the defence against micro-organisms entering by the nose and mouth is borne by the lymphoid tissue situated on the posterior pharyngeal wall. The naso-pharyngeal tonsil becomes swollen, the air-way may be obstructed, and the habit of mouth-breathing is acquired. Also the exposed surfaces and superficial layers of the gland are overworked, lymphocytes in enormous numbers covering the surfaces and obstructing the efferent lymph channels produces a condition described as that of "choked filters." Lymphocytes encumber the surface, mucopus is swallowed in quantities, while the catarrhal condition spreads upwards into the nose and sinuses and down the œsophagus to the stomach, occasionally into the duodenum and bile-ducts. I have noticed catarrhal jaundice occurring in these subjects.

The symptoms of a cold accompanying an attack of measles, or rotheln, the swelling of the tonsils so frequently seen in scarlatina and in other specific infectious diseases disappear on recovery, but in an ordinary cold so many toxic influences of an organic nature constitute ætiological factors that immunity, and the restoration of the structures concerned to their normal condition, is an entirely different matter. The patient may be immune for a variable period of time towards the organism which caused the cold from which he has just recovered, but his exposure to another variety of micro-organism will again bring the defensive functions of his subepithelial glands into action. The result of these recurring colds is

more or less permanent congestion and inflammation, infiltration, and swelling of the affected glands, which, when it affects the naso-pharyngeal tonsil, we call adenoids. A large proportion of those suffering from the presence of adenoid vegetations catch cold with great frequency. But a still greater proportion of those who repeatedly catch cold are the subjects of adenoids, though this applies more in the case of children than adults. This theory will be found to go far towards explaining the different results recorded of the treatment of colds by vaccines. If we grant, then, that the main functions of the glands affected in cases of adenoids are those of defence, the nature and scope of any operative interference have next to be considered. All that is required is to remove the affected portion only of the gland or glands involved. It has long been the practice of recognised experts to pass the curettes used once only over each part of the affected glands, and the same considerations have for many years governed my own treatment of enlargement of the palatine tonsils. I agree with those observers who claim that enlargement of the palatine tonsil is always secondary to enlargement of the naso-palatine tonsil. It is the same process affecting similar organs, and requires similar treatment. In most cases it is neither necessary nor advisable to enucleate the tonsils. Besides robbing the patient of important organs it converts an operation which is virtually free from risk into a procedure dangerous from the deep degree of anæsthesia required and from hæmorrhage. All that is necessary with respect to the palatine tonsils is to excise the superficial portions level with the anterior pillars of the fauces.

The description of the operation advisable, the preparation of the patient, and the after-treatment are outside the scope of this letter.

I am, Sir, yours faithfully,

Manchester, March 17th, 1922. HARRY MERRALL.

THE ANAPHYLACTIC THEORY OF GOUT.

To the Editor of THE LANCET.

SIR,—With regard to the anaphylactic theory of gout, propounded by Dr. Ll. Jones Llewellyn in your issue of March 11th, there is one great objection which to me seems insuperable. Gout is very rare in Scotland, which is generally attributed to the fact that malt liquors are but little consumed. Whether or not the explanation is sound, we may accept it for the moment and eliminate malt and yeast proteins from the list of those incriminated by any anaphylaxis theory, but we have still left on our hands far more than enough protein to cause a high incidence of gout in Scotland if protein sensitisation is an essential factor in the disease.

Before writing to you on the point, I have taken the trouble to write to eight Edinburgh physicians for confirmation of the statement that gout is very rare there. They have all very kindly replied and all in the sense expected. One or two add that the few cases they do see are English and beer-drinkers, and one or two emphasise heredity apart from beer and wine. I am, Sir, yours faithfully,

G. A. WYON, M.D. Edin.

University of Leeds, March 25th, 1922.

THE PERNICIOUS VOMITING OF PREGNANCY.

To the Editor of THE LANCET.

SIR,—We have read with interest the paper by Dr. A. F. Hurst on this subject in THE LANCET of March 18th, more particularly as some of the conclusions at which he arrives are similar to those which we had published in the *Biochemical Journal* of December, 1920. At the Royal Free Hospital, Lady Barrett asked us to investigate such a case, as she and her staff were not satisfied that a high ammonia coefficient was a sufficient indication for the necessity of terminating pregnancy. In this case the coefficient was 58 (expressed as the percentage of the total nitrogen present as ammonia), and it seemed to us that an important factor in the production of such a high ammonia output might be the acidosis of starvation, a view which was borne out by the fairly rapid improvement when the patient was put on a high protein diet. The coefficient was, however, probably too high for starvation and dehydration to be the only causes, and oscillated about a value of 20 for about two months in spite of the cessation of vomiting. In this case the uterus was not emptied, the coefficient eventually came down to normal (8·2), and some months later a healthy full-time child was born. The same woman has recently gone right through another pregnancy without abnormal symptoms.

Since this case was published, three more cases of pregnant women who have gone to term successfully, although showing at one stage an ammonia coefficient of over 40, have been investigated. These were cases belonging to the obstetrical and gynæcological unit of the hospital, and were investigated under the Medical Research Council's scheme. Further, we have found that the ammonia coefficient of a perfectly healthy non-pregnant woman may frequently be as high as 6 or 7.

We are, Sir, yours faithfully,

WINIFRED C. CULLIS.
EVELYN E. HEWER.

London (R.F.H.) School of Medicine for Women, W.C.1, March 22nd, 1922.

BLOOD TRANSFUSION:

INCOMPATIBILITY OR ANAPHYLAXIS?

To the Editor of THE LANCET.

SIR,—The interesting note on a case of ruptured liver reported by Mr. Harry Meade in your issue of March 25th raises an important point in connexion with blood transfusion. Mr. Meade's patient was given two transfusions from the same donor at an interval of 26 days. The first of these produced a slight reaction; the second produced so severe a reaction, after a very small amount of blood had been given, that the transfusion was discontinued. The information given by Mr. Meade is incomplete, for he says merely that the donor's blood was found to be compatible, without stating whether it was of the same group as the recipient, or whether it belonged to Group IV., the group of the so-called "universal donors." It is, on the other hand, possible that the patient belonged to Group I., a so-called "universal recipient." Or perhaps the patient's serum was tested directly against the donor's corpuscles, and their respective groups were not established. However this may be, the case serves to draw attention to the possible dangers attending multiple transfusions from the same donor. Two or more transfusions have been given in a large number of cases, chiefly in the treatment of pernicious anæmia, but usually no ill-effects have resulted. Occasionally, however, as in Mr. Meade's case, a severe reaction has followed one of the later transfusions.

In a case recorded by Thalimer[1] in 1921, a very severe reaction accompanied by hæmoglobinuria followed the second transfusion of a boy belonging to Group I. with blood from his father, who belonged to Group III. Theoretically the donor's blood should have been compatible, since the boy was a "universal recipient," but evidently this may not hold good when the transfusion is repeated. In the cases of pernicious anæmia, reported by Bowcock[2] in 1921, in which severe reactions followed repeated transfusions, patients and donors belonged to the same groups, and the most careful testing of their sera and corpuscles against one another on each occasion had failed to reveal any incompatibility. Apparently another factor independent of group reactions had been introduced, and this may perhaps be regarded as anaphylactic shock following sensitisation of the

[1] Jour. Amer. Med. Assoc., 1921, lxxvi., 1345.
[2] Johns Hopkins Hosp. Bull., 1921, xxxii., 83.

patient by transfusion of blood from another individual even of the same group. The precise nature of these reactions is at present obscure, but the inferences to be drawn from their occurrence are (1) that the terms "universal recipient" and "universal donor" must not be interpreted too literally, and (2) that the same donor should not be used more than once for a given patient even though he belong to the same blood group.

In conclusion, may I point out the desirability of recording all the facts concerning the blood groups when unusual results following transfusion are reported?—I am, Sir, yours faithfully,

GEOFFREY KEYNES.

86, Harley-street, W., March 25th, 1922.

BLOOD TRANSFUSION:

A SIMPLE METHOD OF GROUP DETERMINATION.

To the Editor of THE LANCET.

SIR,—This is the subheading of Dr. Dyke's article on blood grouping, which appeared in THE LANCET of March 25th (p. 579). It may be of interest to point out in connexion with the various methods for determining the four blood groups that it is *unnecessary* to have access to the sera of *two* bloods, one belonging to Type II. and the other belonging to Type III. in order to determine the type of any unknown blood. If a Type II. or a Type III. blood is available the typing of other unknown bloods can easily be accomplished in the following way:—

The formula for Type II. cells when agglutinated with the four types of sera is as follows:—

	1	2	3	4 (sera)
Type II. cells	−	−	+	+

The formula for Type II. serum when it is used to agglutinate the cells of the four types is—

	1	2	3	4 cells
Type II. serum ..	+	−	+	−

Therefore if the type of any unknown blood is to be determined it can be done by first separating the cells and serum of the Type II. blood and also of the unknown blood and then agglutinating the Type II. cells with the unknown serum and the unknown cells with the Type II. serum. If neither show agglutination the unknown blood belongs to Type II., if both are agglutinated to Type III. If the cells of Type II. are not agglutinated but the serum agglutinates, the blood belongs to Type I. If the cells of Type II. are agglutinated but the serum does not, the unknown blood belongs to Type IV. A similar method can also be adopted if only a Type III. blood be available

This method was pointed out to me by Prof. W. S. Lindsay and Prof. George Rea, of Saskatchewan University, and was devised by them to meet a difficulty that may arise—viz., that samples of Type II. and Type III. sera are not available when a transfusion has to be done. This simple, ingenious, and useful procedure seems to have escaped the notice of all writers on the subject of group determination.

I am, Sir, yours faithfully,

TOM HOUSTON.

Laboratory of the Royal Victoria Hospital, Belfast, March 25th, 1922.

HORSHAM HOSPITAL.—A new hospital is being erected on the site and according to plans agreed upon two years ago. During 30 years' work the existing building, known as the Horsham Cottage Hospital and now to be called the Horsham Hospital, developed its sphere of work, and though there is really only accommodation for 12 in-patients frequently 15 or 16 beds are occupied. The site for the new building, which will face the south-west, is 1¼ acres in extent, looking across a well-wooded park; the building will include everything necessary for a thoroughly up-to-date hospital. The sum of £12,000 has already been obtained for the new building. In 1921, 279 in-patients were admitted and 258 operations were performed, 152 of which were major operations. Subscriptions showed an increase during the 12 months. With the fees now willingly paid by patients the balance on the year's working amounts to £180.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations held recently the following candidates were successful:—

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.

Part I., Physics and Electrotechnics.—Eric G. Barker, Maurice Bienenstock, Purshottam M. Desai, John A. Geraghty, Bernard Grellier, Sidney M. Hepworth, James P. Thierens, Joseph A. Thomson, and Oscar R. Unger.

Part II., Radiology and Electrology.—Maurice Bienenstock, Frederick T. Burkitt, James D. Kidd, John S. Levack, Margaret C. Murphy, Walter K. Parbury, Jyoti Lal Sen, and John S. Webster.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE. At examinations recently held the following candidates were successful:—

THIRD EXAMINATION FOR DEGREES OF M.B., B.CH.

Materia Medica, Pharmacology and Pharmacy; Public Health; Medical Jurisprudence; Pathology and Elementary Bacteriology.—Robert L. Bell, Norman Capstaff, Phillis Hall, Norman Harkness, Robert E. Haswell, Joseph E. Israel, James S. Johnson, Harold B. L. Levy, George M. Miller, John E. D. Miller, Winifred M. Proctor, Margaret Scoresby-Jackson, Kathleen Shelton, Donald S. Sinclair, William F. O. Taylor, and Pieter J. G. de Vos.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—The following have passed the Final Dental Examination and have been granted the diploma L.D.S. R.C.S. Edin.:—

James M. Crombie, William F. Coutts, Johannes Jeremias du Plessis, Dirk Wouter Jacobus Ackermann, Thomas S. Anderson, George H. Brigham, William H. Anderson, Charles A. Smith, John du Plessis Moll, Kenneth M. Yorston, William Scott, Thomas A. Eckford, William G. Bannerman, James A. Edwards, Arthur H. Kay, William J. Cook, John M. Mein, Harvey G. Mackintosh, John H. Bain, John C. Black, Peter E. Malloch, Herbert J. Appleyard (with honours), and John J. Mann (with honours). George Lindsay and Gordon S. Richardson passed in the subject of Medicine and Surgery.

UNIVERSITY OF EDINBURGH.—The chair of Midwifery, rendered vacant by the resignation of Sir Halliday Croom, has been accepted by Prof. Benjamin Philip Watson, at present professor of the same subject in the University of Toronto. The new professor will be responsible for the teaching of both midwifery and gynæcology. As a student he had a most distinguished career in Edinburgh. He graduated with first-class honours in July, 1902, and graduated as M.D. in 1905. He has held the Ettles Scholarship and Buchanan Scholarships in gynæcology, as well as the Freeland Barbour Research Fellowship of the Royal College of Physicians. He has held numerous gynæcological appointments in Edinburgh. In the session of 1912–13 he was lecturer on midwifery and gynæcology in the School of Medicine of the Royal Colleges, Edinburgh, and in 1913 he was appointed professor of obstetrics and gynæcology in the University of Toronto. During the war, Prof. Watson served as surgeon in the Canadian Hospital at Salonika.

UNIVERSITY OF LONDON.—A meeting of the Senate was held on March 22nd, the Vice-Chancellor, Sir Sydney Russell-Wells, being in the chair. Mr. C. A. Pannett, M.D., B.S., B.Sc. Lond., F.R.C.S., was appointed to the University Chair of Surgery tenable at St. Mary's Hospital Medical School. He obtained gold medals both at the M.B., B.S. Examination and at the M.D. Examination in Pathology. From 1913 to 1920 he was assistant surgeon to the Royal Free Hospital, and since 1920 has been assistant director of the Surgical Unit at St. Mary's Hospital. During the war he served in the R.A.M.C., and was in Mesopotamia and India for three and a half years. In 1920–21 he was Hunterian lecturer at the Royal College of Surgeons. He is the author of numerous papers on surgical operations and research. Dr. C. A. Lovatt Evans, D.Sc. Lond., L.R.C.P., M.R.C.S., was appointed to the University Chair of Physiology tenable at St. Bartholomew's Hospital Medical College. He was educated at the University of Birmingham and at University College and University College Hospital Medical School, London. In 1914 he was Schafer Prizeman in Physiology at University College, of which he is a Fellow. In 1917 he was appointed Professor of Experimental Physiology and Experimental Pharmacology in the University of Leeds. He has carried out research work at Freiburg and at Cambridge, and recently at the National Institute for Medical Research, and is the author of numerous papers on Experimental and Chemical Physiology. Regulations were adopted for the administration of the Thomas Smythe Hughes Medical Research Fund. The Degree of D.Sc. in Physiology was conferred on Miss E. E. Hewer, an internal student, of Bedford College, for a thesis entitled "Some Functions of the Suprarenal Glands."

SMALL-POX AT OLDHAM.—Five cases of small-pox were reported on March 24th, the last previous case having been reported a month ago.

FAREWELL DINNER TO DR. J. NIVEN.—On the occasion of his retirement from the post of medical officer of health, Dr. Niven will be entertained to dinner in the Queen's Hotel, Manchester, on April 11th.

FOOD EDUCATION SOCIETY.—A lecture will be given by Miss A. D. Muncaster, lately inspector of kitchen management and kitchen economies in military hospitals, on Feeding in Institutions, with Special Reference to School Diet, at 5.30 P.M., on Friday, April 7th, in the Council Chamber, Caxton Hall, Westminster, London, S.W. Sir William Collins will preside and the lecture will be followed by a discussion. Tickets (reserved seats 5*s.* and 2*s.* 6*d.*, unreserved 1*s.*) may be obtained from the Organising Sec., Food Education Soc., 265, Strand, W.C. 2, or at the meeting.

ROYAL PORTSMOUTH HOSPITAL.—The outstanding feature of the annual report of this institution is the urgent need of increased financial help. The expenditure amounted to £20,759 and the ordinary income to £15,565, leaving a deficit of £5194. During the year 1921 2553 in-patients and 11,658 out-patients were treated. The average cost of each in-patient was £7 6*s.* 3*d.*, and the average cost per bed occupied was £124 11*s.* 6*d.* The average number of days each in-patient was resident was 21. There has been a decrease in the number of attendances and new patients in the venereal diseases' department, and it may well be that the facilities for treatment provided by the hospital are responsible to a great extent for the diminution of the incidence of venereal diseases in Portsmouth.

NURSING SERVICE OF MENTAL HOSPITALS.—The Board of Control have added the following names to the Committee, announced last week, which is to inquire into the nursing service of mental hospitals: Mr. E. Sanger, ex-chairman of the London Asylums Committee; Mrs. Pinsent, commissioner of the Board of Control; Miss M. M. Thorburn, R.R.C., matron at Horton Mental Hospital.

COMMITTEES ON DIETARIES AND CLINICAL RECORDS IN MENTAL HOSPITALS.—The Board of Control, with the approval of the Minister of Health, have appointed the following persons as a committee, to consider the dietaries in county and borough mental hospitals and to report what changes, if any, are desirable and whether a minimum dietary scale should be fixed: Dr. R. W. Branthwaite, C.B. (chairman), Commissioner of the Board of Control; Dr. M. Greenwood, medical statistician to the Ministry of Health; Dr. R. Worth, medical superintendent, Springfield Mental Hospital; Dr. L. O. Fuller, medical superintendent, Three Counties Mental Hospital, Arlesey.

A committee has also been appointed to consider the clinical and other records kept in county and borough mental hospitals, and to report in what ways the system of keeping these records can be improved and what alterations in the Commissioners' rules in regard to them are desirable. The following are the members: Dr. A. Rotherham (chairman), Commissioner of the Board of Control. Dr. H. A. Kidd, medical superintendent, West Sussex County Mental Hospital; Dr. S. J. Gilfillan, medical superintendent, London County Mental Hospital.

SOCIETY OF RADIOGRAPHERS.—At an examination held recently 17 candidates, 6 men and 11 women, were successful in both sections, and have been duly elected members of the society. Four candidates passed in Section 1, comprising Electrical Theory, Medical Electricity, Physics, Chemistry, Photography, Radium and Ultra-Violet Rays; and 7 passed in Section 2, comprising Radiography, X Ray Apparatus, Anatomy, and Radio-Therapy. Seventeen candidates failed in both sections. The next examination will be held in July.

The results of the prizes offered by the President and Council of the society for the best theses of 5000 words have also been issued. These theses had to be in the hands of the Council by Dec. 31st, 1921, and the subjects selected for the theses for 1921 were as follows: For the radiographic prize, presented by Sir Archibald Reid: The technique of the radiographic examination—(*a*) the urinary tract of the gall-bladder, or (*b*) the spine and pelvis, or (*c*) the cranium; only one subject to be selected, and to be illustrated by not less than six nor more than 12 skiagrams. For the electro-therapy prize, presented by the Council of the society: (*a*) the theory of ionisation, illustrated by experimental evidence, or (*b*) the different methods of producing X rays for therapy, or (*c*) the method of diathermy and its application in theory and practice. Mr. A. L. Townsend has been awarded 10 guineas for his thesis on the different methods of producing X rays for therapy, and Mr. H. J. Suggars 10 guineas for his thesis on the radiographic examination of the spine and pelvis. Mr. G. MacLardie has been awarded 5 guineas for his thesis on the method of diathermy and its application in theory and practice.

OPTICAL SOCIETY.—At a meeting of this Society, to be held at the Imperial College of Science and Technology at 7.30 P.M., on Thursday, April 6th, a paper will be presented on Diffraction Halos in Normal and Glaucomatous Eyes, by Mr. H. H. Emsley, B.Sc., and Mr. E. F. Fincham.

RONTGEN SOCIETY.—A meeting will be held on Tuesday, April 4th, at 8.15 P.M., in the Institution of Electrical Engineers, Savoy-place, London, W.C. 2, when Major K. Edgcumbe will read a paper on Electrical Measuring Instruments commonly employed by Radiologists. A joint meeting with the Institution of Electrical Engineers and the Electro-Therapeutic Section of the Royal Society of Medicine will be held on Thursday, April 27th, at the Institution.

PRESENTATION TO A MEDICAL MAN.—Dr. F. J. Pearson, a medical man well known in Owston Ferry (Doncaster) and the neighbourhood, has been presented with a cheque for £56 by friends and well-wishers. The presentation was made privately at his house by the Bishop of Grantham, accompanied by the Rev. A. G. Pentreath. Mrs. Pearson was at the same time presented with a gold brooch set with pearls.

A NEW SURGICAL CLUB IN DUBLIN.—A surgical club has been founded in Dublin on the lines of the surgical circle recently revived in London. Surgeons from all the hospitals are members, and each in rotation will be "at home" to the other members on his operating morning to demonstrate his methods and technique. The first meeting was held recently at Mercer's Hospital on the invitation of Sir W. I. de C. Wheeler. It is understood that meetings will be held once a month.

SCHOLARSHIPS AND GRANTS FOR SCIENTIFIC RESEARCH.—The Council of the British Medical Association is prepared to receive applications for *Research Scholarships* as follows: 1. An Ernest Hart Memorial Scholarship, of the value of £200 per annum, for the study of some subject in the department of State medicine. 2. Three research scholarships, each of the value of £150 per annum, for research into some subject relating to the causation, prevention, or treatment of disease. Each scholarship is tenable for one year, commencing on Oct. 1st, 1922. A scholar may be reappointed for not more than two additional terms.

Grants.—The Council is also prepared to receive applications for grants for the assistance of research into the causation, treatment, or prevention of disease. Preference will be given, other things being equal, to members of the medical profession and to applicants who propose as subjects of investigation problems directly related to practical medicine. The conditions of the award of scholarships and grants are stated in the Regulations, a copy of which will be supplied on application to the Medical Secretary of the Association, 429, Strand, London, W.C. 2.

Applications must be made not later than June 24th in the prescribed form, a copy of which will be supplied on application. Each application should be accompanied by testimonials, including a recommendation from the head of the laboratory, if any, in which the applicant proposes to work, setting out the fitness of the candidate to conduct such work, and the probable value of the work to be undertaken. This is not intended, however, to prevent applications for grants-in-aid of work which need not be performed in a recognised laboratory.

THE LATE DR. W. A. HOLLIS.—William Ainslie Hollis, M.D. Camb., F.R.C.P. Lond., who died at his residence in Hove, on March 26th, in his eighty-third year, was a son of the late Dr. William Mellet Hollis, J.P., and was born at Lewisham in 1839. He was educated at Brighton College and graduated M.A. at Trinity College, Cambridge, in 1866. Then, following in the footsteps of his father, he studied medicine at St. Bartholomew's Hospital, where he was house physician. He proceeded to the M.B. degree in 1867, to the M.D. degree in 1871, and was elected F.R.C.P. in 1876. In that year he went to Brighton and joined the staff of the Royal Sussex County Hospital where he later held the post of consulting physician. He had an extensive private practice, and held a number of local appointments, including that of physician to the L.B. & S.C. Railway Provident Society. He had held the offices of President of the Brighton and Sussex Medico-Chirurgical Society and Chairman of the Brighton branch of the British Medical Association, of which Association he was President in 1913-14. Dr. Hollis was a great lover of natural history in many aspects; he had filled the office of President of the Brighton and Hove Natural History and Philosophical Society, and he presented the local museum with a very valuable collection of butterflies and moths, some of extinct species. He also found time to take an interest in local affairs, and was for a time a member of the Hove Town Council. Among his contributions to scientific journals was an interesting article on Facial Wrinkles and Emotional Grimace, which appeared in THE LANCET on Jan. 4th, 1913.

THE Chelsea Hospital for Women has received a bequest of £300 from the late W. H. Clarke's estate.

ROYAL INSTITUTION OF GREAT BRITAIN.—The Friday evening discourse on April 7th will be delivered at 9 P.M. by Sir Ernest Rutherford, F.R.S. The subject is the Evolution of the Elements. On April 8th, at 3 P.M., Sir Ernest Rutherford will give his sixth lecture on Radio-activity.

GENERAL HOSPITAL, BIRMINGHAM.—The annual report presented on March 15th showed that the number of in-patients last year was 5818, a decrease of 1112 on the previous year; the daily average was 317. The out-patients numbered 40,907, as against, 42,376 in 1920; 4941 operations were performed. At the end of 1920 there was an accumulated deficiency of £62,790, which was met by a sale of securities realising £10,014, and by a grant from the National Relief Fund of £17,800. A searching inquiry has been made into all expenditure, and although it was found impossible to make any material reduction several small savings were effected and, where possible, expenditure was rationed. It was decided that 50 beds should be closed, and also 28 beds at the Jaffray Hospital. Even these economies were insufficient to meet the case, and it was decided that all patients who were in a position to do so must contribute to the funds of the hospital. Patients contributing through hospital benevolent funds at their works were asked to provide tickets. Patients too poor to pay anything are admitted free. All other patients are expected to pay a maintenance charge not exceeding two guineas a week. In July the Handsworth branch of the General Hospital League undertook to raise £750 to enable a ward of 12 beds to be reopened, and this undertaking has been more than fulfilled. The income from subscriptions and donations showed an advance during 1921, having reached £26,029. The deficit for the year was £13,885, which, added to the deficit on the Jaffray Hospital of £3481, made a total adverse balance of £17,366, as against £30,135 at the end of 1920. Dr. Thomas Wilson was appointed honorary consulting obstetric physician in recognition of valuable services rendered to the institution as a member of the staff for 28 years.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lieut. G. E. Heath to be Surg. Lieut. Commdr. and F. W. Watt to be temp. Surg.-Lieut. (D).

ROYAL ARMY MEDICAL CORPS.

Temp. Capt. S. A. McClintock relinquishes the temp. rank of Maj.

Capts. P. R. O'R. Phillips, G. H. Barry, and J. H. Baird are seconded for service with the Egyptian Army.

Capt. C. W. Sparks retires, receiving a gratuity.

Temp. Capt. and Bt. Maj. E. A. Aldridge relinquishes his commn. and retains the Bt. rank of Maj.

Temp. Capt. J. A. Pringle relinquishes his commn. and retains the rank of Capt.

Lt. (temp. Capt.) D. C. Bowie to be Capt.

THE KING'S OWN MALTA REGIMENT OF MILITIA.

The undermentioned relinquish their commns., with permission to wear the prescribed uniform:—Majs., and are granted the hon. rank of Lt.-Col.: A. Trapani and A. Arigo. Surg. Majs., and are granted the hon. rank of Surg. Lt.-Col.: R. Samut and C. Manche.

TERRITORIAL ARMY.

Capt. R. Bruce resigns his commn. and retains the rank of Capt.

The undermentioned officers relinquish their commns. and retain their rank, except where otherwise stated: Lt.-Col. S. A. Coad; Maj. J. Ward (granted the rank of Lt.-Col.); Capt. (Bt. Maj.) A. D. Griffith; Capts. J. Anderson, T. P. Caverhill (granted the rank of Maj.), J. S. McConnachie (granted the rank of Maj.), C. G. Strachan, E. Donaldson, J. B. Foubister, A. Leitch, J. Cowan, and G. G. Wray.

Supernumerary for Service with O.T.C.: Capt. J. C. Robb (late R.A.M.C.) to be Capt. for service with Belfast Univ. Cont., Senr. Div.

TERRITORIAL ARMY RESERVE.

Lt.-Col. T. Forrest, from Genl. List, to be Lt.-Col.

ROYAL AIR FORCE.

J. C. T. Fiddes is granted a short service commission as a Flight Lt.

Squadron Leader R. L. Roe relinquishes his short service commission on account of ill-health and is permitted to retain the rank of Maj.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 22ND.

NURSING COUNCIL RULES.

Major BARNETT moved "That an humble address be presented to His Majesty praying that the rules of the General Nursing Council for England and Wales laid before Parliament on March 6th, 1922, in pursuance of Section 3 (4) of the Nurses Registration Act, 1919, and numbered 9a and 43 (-) respectively, may be annulled." He said that Section 6 (3) of the Nurses Registration Act provided that there should be reciprocity, as it was very desirable that nurses registered in one country should be able to join the register in another country. The Subsection also provided that "The Council shall make rules under this Act enabling persons registered as nurses in Scotland or Ireland to obtain admission to the register of nurses established under this Act, and with a view to securing a uniform standard of qualification in all parts of the United Kingdom the Council shall before making any rules under this Act, with respect to the conditions of admission to the register, consult with any nursing councils which may be established by Parliament for Scotland and Ireland respectively." That had not been done. The rules which now lay on the Table of the House were not submitted by the Minister of Health to the General Nursing Council for Scotland or for Ireland. He asked whether, in view of the fact that the rules were plainly ultra vires, the Minister of Health proposed to persist in them.

Mr. JAMES WILSON seconded the motion.

Sir A. MOND said that this was the greatest mare's nest that had ever been produced in that House. The legal point was absolutely clear, and even if it was challenged Parliament never passed an Act of such an absurd nature as to put the English Nursing Council and the Minister responsible for it in the position of being incapable of carrying out the Act, except by the consent of the Scottish Nursing Council. This was really a very old-standing squabble which ought not to trouble the House. So long had the feud gone on that no rules came into existence at all. His predecessor got a Bill passed, a Council had now been set up, and he had been doing his best to get it to work. On the Council, unfortunately, the old feud had been pursued by a very small minority, which was now trying to destroy the rules which he had sanctioned, because they were the only way in which nurses in this country, numbering some 50,000, would ever get on the register in their lifetime. He had had a crisis on the Nursing Council, resignation of the chairman and of 16 out of 21 members of the committee. He had now an able chairman and he had got the bulk of the committee to go back, on the understanding that he would support them. They had introduced a rule, the purpose of which was twofold. One purpose was that instead of a nurse having to send her original nursing certificate to London to be certified she could get a certified copy and send it up under proper conditions and have it entered. The second point was that there were two big organisations which had been in existence for many years—the College of Nurses and the Royal British Nursing Association. Out of 50,000 nurses over 19,000 were registered on the College of Nurses register. Their qualification was more severe than the other, requiring three years' training instead of one. By these rules they were enabling the registrar of the Nursing Council to go and examine copies of the certificates of the Royal College of Nurses whenever an application was made to satisfy himself. The same would be done with the other nursing associations. In the four months since the register came into existence in November 3235 actual cases were received and only 984 were completed. Applications were coming in at the rate of 800 a month, and less than one-third had been finally passed by the Council. The present Council must, according to the Act, come to an end not later than Nov. 23rd next. Out of 50,000 nurses they had only 1500 on the register and, unless between now and Nov. 23rd next they got a large number of qualified nurses on the register, they would be in the absurd position of having the Council for the next three years elected by quite a small number of the 50,000 nurses. That was the reason why he had sanctioned this procedure. The Nursing Council, understanding its business, had passed it by 16 to 6. The Matrons Association of Great Britain were entirely in favour of the rules. If they were rejected there would be no course left open but to move the repeal of the Act, do away with the register altogether, when the whole thing would become a farce.

After further discussion the motion was rejected on a division by 64 votes to 49.

Panel Patients and the Choice of Doctor.

Mr. LEONARD LYLE asked the Minister of Health whether any statistics existed showing the percentage of persons who, making payments under the Health Insurance Acts and registering with a panel doctor, yet never made any recourse to his services even in case of illness, but chose and paid another practitioner.—Sir A. MOND replied: No statistics on this point are available, but there is nothing to indicate that the percentage of such persons is considerable.

Pure Milk-Supply.

Mr. TREVELYAN THOMSON asked the Minister of Health whether he was aware of the pressing urgency of making better provision for securing a pure supply of milk for human consumption; and how soon would he be in a position to introduce legislation dealing with this question.—Sir A. MOND replied: I fully appreciate the importance of securing purer milk, but it is in my judgment equally important to avoid action tending to decrease the production of milk and add to the price to the consumer. The matter continues to occupy my attention, but I cannot say when it will be possible to introduce legislation.—Mr. HURD: Can we at least be assured that the Act of 1915, which is on the Statute Book but is not yet in operation, will not be brought into force until certain amendments have been made in it?—Sir A. MOND: I am considering how to alter the Act of 1915.

Deaths due to Starvation and Privation.

Mr. ROBERT RICHARDSON asked the Minister of Health if he was aware that the request to the coroners from the Local Government Board always contained a caution that the return should include only cases where the jury found that death was brought about by starvation or privation due to destitution or in which a death, primarily due to disease, was accelerated by lack of food, shelter, or medical attention arising from poverty, and that the returns showed that, in all the cases except about 5 per cent. of the whole, this principle was complied with; would he say how the inspectors could always obtain information that a death on which a jury had found such a verdict had taken place unless it was reported to them by the coroner; whether there were now a very large number of deaths from privation which did not appear on the lists; and whether he would reconsider the subject from a health point of view and maintain the lists, with the improvement that the coroners should be asked to send in a report after each inquest had been held, and that it be made clear that cases where a coroner sat without a jury should be included.—Sir A. MOND replied: The answer to the first part of the question is in the affirmative, but I cannot say in what percentage of cases the instruction mentioned was complied with. The inspectors obtain their information from the Poor-law officers and the local press, and I have no reason to suppose that any cases of deaths from privation upon which inquests are held escape the inspectors' notice. I will certainly consider whether the present system can be improved.

New Tuberculosis Vaccine for Bovine Animals.

Mr. FORD asked the Minister of Agriculture if he was aware of the alleged discovery by the Pasteur Institute, of Lille, of a vaccine for conferring immunity from tuberculosis on bovine animals; and, in view of the fact that the Pasteur Institute was so largely supported by the French Government as to be almost an official department, would he consider the advisability of requesting his colleague at the Foreign Office to institute suitable inquiries of the French Government with a view of enabling the treatment to be introduced into this country as soon as possible.—Sir A. GRIFFITH-BOSCAWEN replied: The answer to the first part of the question is in the affirmative. I understand, however, that the investigation is still in an experimental stage, and the action suggested by my hon. friend would be premature at the moment. The progress of the investigation is, however, being carefully watched by the Ministry.

THURSDAY, MARCH 23RD.

Chronic Cases of Tuberculosis.

Mr. TILLETT asked the Minister of Pensions whether he would give further consideration to tuberculosis cases, in view of the fact that cases of tuberculosis attributed to or aggravated by service, which had been under treatment for four years or more, should be regarded as chronic, and permanent pensions awarded on a generous scale, seeing that this disease, except in very early and superficial cases, rendered a man unfit to undertake any but the lightest work under the most favourable conditions.—Mr. MACPHERSON replied: Cases of tuberculosis, as of other disabilities, will be considered for final awards in accordance with the provisions of the Act of 1921, as early as possible. I am advised, however, that each such case of tuberculosis must be considered on its merits and that, having regard to the nature of this disease, it would not in all cases be to the best interests of the pensioner to make a final award.

Ducane-road Hospital Dispute Settled.

Mr. PENNEFATHER asked the Minister of Pensions whether negotiations with the Hammersmith board of guardians had resulted in arrangements being made which would enable the Ministry of Pensions hospital for wounded soldiers at Ducane-road, Shepherd's Bush, to be carried on as heretofore.—Mr. MACPHERSON replied: My hon. friend will be glad to learn that the answer is in the affirmative.

Revised List of Surgeons under Workmen's Compensation Act.

Mr. HANCOCK asked the Secretary for the Home Department whether, for the convenience of all persons to whom the Workmen's Compensation Act applied, he would have the list of certifying surgeons and appointed surgeons, which was printed in 1914, corrected and brought up to date.—Mr. SHORTT replied: A revised list is in course of preparation and will be issued as soon as possible.

Safeguarding of Industries Act.

Mr. KILEY asked the President of the Board of Trade whether he had considered the situation arising out of the fact that the referee had given judgment under the Safeguarding of Industries Act against the Board of Trade in respect of santonin, cream of tartar and citric acid, and sugar milk; and whether, in view of the fact that these decisions involved principles affecting a considerable number of other commodities in the key industries list as defined by the Board of Trade, and in view of the considerable expenditure of public and of other money involved in contesting these cases, he was prepared to take action to delete from the list commodities whose deletion was logically involved in the judgments already given, and thus save the enormous expense involved in obtaining individual decisions.—Mr. BALDWIN replied: I am aware of the decisions mentioned, but I am not satisfied that the principles underlying them are so definite and of so general application as the hon. Member appears to suggest, or were intended to be so by the referee. The whole question will, however, be considered in the light of these decisions and of the decisions in other cases which will be taken very shortly.

Medical Economies in the Territorial Army.

Lieut.-Colonel FREMANTLE asked the Secretary for War what would be the total number of officers and of other ranks on the peace and war establishments, respectively, of the several medical units of the Territorial army on effect being given to the proposed economies; what would be the peace and war establishments of medical officers on the headquarters staff of a division; and whether it was proposed to give generous compensation to D.A.D.'s M.S. of the Territorial army on the premature termination of their appointments.—Sir L. WORTHINGTON-EVANS replied: I regret that the details of these establishments are not yet sufficiently settled to enable me to publish them. In regard to the last part of the question, the Deputy Assistant Directors of Medical Services were given two months' notice of abolition of appointment from March 1st, 1922, and they will continue in receipt of full pay and allowances of the appointment up to April 30th, 1922, inclusive.

Cancer Statistics.

Sir A. MOND, Minister of Health, informed Mr. HANCOCK that the number of deaths from cancer in Great Britain and Ireland, and the percentage of population that died from that cause in the years 1913-1920, were as follows:—

Year.	England and Wales		Scotland.		Ireland.	
	Deaths.	Rate per cent. of population.	Deaths.	Rate per cent. of population.	Deaths.	Rate per cent. of population.
1913	38,939	0·1064	5212	0·110	3900	0·0891
1914	39,517	0·1069	5388	0·113	3807	0·0869
1915	39,847	0·1121	5291	0·111	3826	0·0882
1916	40,630	0·1166	5431	0·113	3938	0·0902
1917	41,158	0·1210	5544	0·114	3839	0·0876
1918	41,227	0·1218	5472	0·112	3811	0·0866
1919	42,144	0·1145	5657	0·116	3864	0·0866
1920	43,687	0·1161	5765	0·119	3823	0·0852

MONDAY, MARCH 27TH.

Welsh Regional Survey.

Mr. T. A. LEWIS asked the Minister of Health whether the report of the South Wales Regional Survey Committee had yet been considered by the Ministry; and, if so, whether there was a prospect of any of the recommendations contained therein being put into operation.—Sir A. MOND replied: The valuable report of this Committee has been carefully considered. The present time is not opportune for adopting special measures for carrying out the recommendations of the Committee, but they are being borne in mind.

Summer Milk Supplies.

Mr. HUGH MORRISON asked the Minister of Health whether his attention had been called to the fact that a combination of milk distributors had already announced the retail price of summer milk supplies, although contracts had only been entered into with producers in isolated cases; and whether, in view of the manner in which cost of production was ignored by the combination, he would bear that circumstance in mind when considering any amendment of The Milk and Dairies (Consolidation) Act, 1915, so that no additional charges might be imposed upon producers.—Sir A. MOND replied: Yes, Sir, I am very desirous of avoiding any measures which would add to the cost of production of milk.

Ex-Service Men in Mental Institutions.

Mr. ALFRED T. DAVIES asked the Minister of Pensions whether, in the case of ex-Service men in mental institutions, the Ministry would recommend that, where possible, a representative of the British Legion should be added to the visiting board of such institutions.—Sir A. MOND replied: There is no power to add to the visiting committee persons who are not members of the appointing authority, but visits of representative bodies who are interested in the welfare of patients are always welcomed by medical superintendents.

Schools for Physically and Mentally Defectives.

Mr. AMMON asked the President of the Board of Education whether he was aware that, on grounds of economy, a number of the special schools in London for physically and mentally defective children were being closed; and whether, in view of the certain injury that would fall to the children as a result, he would take steps to maintain all such existing special schools.—Mr. FISHER replied: The only proposal, of which I am aware, for the closure of a special school in London relates to a small school for physically defective children conducted in the premises of a voluntary hospital. In this case the children are to be transferred to other schools. I am not aware of any other proposals to close special schools for physically and mentally defective children in London on the grounds of economy.

Cream of Tartar and Citric Acid.

Dr. MURRAY asked the President of the Board of Trade the date when he received the complaint that a duty of 33⅓ per cent. was being improperly levied on cream of tartar, tartaric acid, and citric acid; the date when the complaint was handed to the referee to be dealt with; was he aware that the referee had now decided that this duty should not have been levied; what amount had been collected by the Customs authorities on these commodities; and was he prepared to take any action to secure the refunding of such amount.—Mr. STANLEY BALDWIN replied: A large number of formal notices of complaint under Section 1 (5) of the Safeguarding of Industries Act were received in respect of the commodities mentioned. A joint case was submitted on behalf of a number of complainants on Dec. 5th; amended statements were subsequently submitted and placed before the referee, who called for further particulars which were furnished on Jan. 19th. The decision of the referee was signed on March 25th and the commodities mentioned were withdrawn from the dutiable list as from that date. The amount of the duties collected is £5718. As regards the last part of the question, I would draw the attention of the hon. Member to the provision of Section 1 (5) of the Act which is to the effect that any decision of the referee shall be without prejudice to anything previously done.

TUESDAY, MARCH 28TH.

Consumption of Beer and Spirits.

Mr. HURD asked the Secretary for the Home Department how the consumption of beer and stout and of spirits per head of the population in 1921 compared with that in 1913 on the basis of alcoholic content.—Sir R. HORNE, Chancellor of the Exchequer, replied: Statistics of actual consumption of beer and stout and of spirits are not available, but the estimated quantities measured in terms of proof spirit per head of the population retained for consumption in the United Kingdom in the years ending Dec. 31st, 1913 and 1921, respectively, are as follows:—

	1913	1921
	Proof gallons.	
Beer and stout	2·61	1·9
Spirits	0·70	0·39

Medical Treatment of School Children.

On the motion for the third reading of the Consolidated Fund Bill, Mr. FISHER, Minister of Education, replying to a debate on the education policy of the Government, said that great progress had been made in regard to the Education Act of 1918. Out of 24 clauses only three had not been put into operation. There had been great advances in medical treatment under the Act, and this year for the first time the metropolis had made full and ample provision for the treatment of the minor ailments of the children attending school.

Blind and Deaf Children.

Lieut.-Colonel JOHN WARD asked the President of the Board of Education whether he was aware that the operation of Circular 1245 of the Board of Education, which limited their expenditure on the blind and deaf in 1922–23 to those of the current year, will prevent the attendance of some such children at suitable schools; that the Manchester Education Committee has already decided, in the cases of blind or deaf children waiting for admission to suitable schools, that such children can only be sent as those at present in schools leave at the age of 16; and whether, because of the danger of individual blind or deaf children suffering the loss of their educational training, which is their only hope in life, he will withdraw the Circular referred to.—Mr. FISHER replied: Circular 1245, which was issued in January, 1922, conveyed a warning, not a decision, as to possible restrictions in 1922–23 on expenditure on special schools, not for the blind and deaf only, whose education necessarily demands an exceptional measure of individual attention, but for all types of defective children. I am fully alive to the needs of blind and deaf children, and hope that by the exercise of greater economy over the whole field sufficient provision for their education may still be made.

Cost of Mentally-Defective Schools.

Sir J. D. REES asked the President of the Board of Education whether he could give the cost per head of the open-air schools and mentally-defective schools, and whether any official reports had been issued upon the education given in the latter case and of its results.—Mr. FISHER replied: The average cost per child during the year ended March 31st, 1921, of schools for mentally defective children and of open-air schools maintained by local education authorities and voluntary bodies, and certified by the Board, was as follows:—

Schools for Mentally Defective Children—	
Local education authority residential schools ..	£95
Local education authority day schools ..	27
Non-local education authority residential schools	62
Open-Air Schools—	
Local education authority residential schools ..	97
Local education authority day schools ..	35
Non-local education authority residential schools	86

As regards the education given in the schools for mentally defective children, a full account appears in Section VII. (p. 98 and onwards) of the Report of the Chief Medical Officer of the Board for 1917.

Appointments.

Ancoats Hospital: MCEVEDY, P. G., M.B., B.S. Lond., F.R.C.S. Eng., Resident Surgical Officer; CONGDON, PHYLLIS M., M.B., Ch.B., Manc,. Resident Medical Officer; PANTON, J. A. M.D., Ch.B. Manc., M.R.C.S., L.R.C.P. Lond., House Surgeon; GLEAVES, E., M.B., Ch.B. Manc., Medical Registrar; PATERSON, R. S., M.B., Ch.B. Manc., Pathological Registrar.

Certifying Surgeons under the Factory and Workshop Acts: LAMBIE, J. F., M.B., Ch.B. Glasg. (Pollokshaws); KING, C., M.B., B.Ch. Cantab, F.R.C.S. Edin. (Newton Abbot).

Vacancies.

For further information refer to the advertisement columns.

Bath Royal Mineral Water Hospital.—Res. M.O. £250.
Bedford County Hospital.—Asst. H.S. £150.
Belgrave Hospital for Children, Clapham-road, S.W.—Asst. P. 50 guineas.
Birmingham General Hospital.—Two H.S.'s. Each £100.
Birmingham Municipal Anti-Tuberculosis Centre, &c.—Third Asst. Res. M.O. £400.
Bristol Royal Hospital for Sick Children and Women.—H.P. and H.S. Each £125.
Cambridge, Addenbrooke's Hospital.—H.P. £130.
Charing Cross Hospital.—Obstet. Reg.
Exminster, Devon Mental Hospital.—Locum Tenens. £7 7*s.* per week.
Gloucester Royal Infirmary.—Asst. H.S. £150.
Hospital for Consumption, &c., Brompton.—H.P. £50.
Hospital for Sick Children, Great Ormond-street, W.C. 1.—H.P. £50. Asst. Cas. O. £50.
Hull City Education Committee.—Asst. Sch. M.O. £500.
Hull Royal Infirmary.—Sen. H.S. £200.

Ipswich, East Suffolk and Ipswich Hospital.—H.S. £150.
Kirkcaldy Hospital.—Consulting S.
Leeds Public Dispensary.—Jun. Res. M.O. £150.
Leeds University.—Med. Tutor and Reg. Also Clin. Surg. Assts. Each £500.
Leicester Royal Infirmary.—Hon. Asst. P.
Lincoln County Hospital.—Third H.S. £150.
London Homœopathic Hospital, Great Ormond-street, W.C.—Anæsthetist. £50.
Manchester Union.—Asst. M.O. £350.
Miller General Hospital for South-East London, Greenwich.—Res. Cas. O. £200.
Ministry of Pensions.—Jun. M.O.'s £350.
Newcastle-upon-Tyne, Wooley Sanatorium.—Med. Supt. £750.
Oxford, Headington Orthopædic Hospital.—Jun. Res. S. £250.
Royal Free Hospital, Gray's Inn-road, W.C.—Cas. O. £100.
Ryde, Royal Isle of Wight County Hospital,—Hon. Surg. to Ear, Nose and Throat Dept.
St. Mary's Hospital for Women and Children, Plaistow, E.—Res. M.O. £175.
St. Thomas's Hospital.—Demonstrator of Path. and Morbid Anat. £450.
Sheffield Royal Hospital.—Asst. Cas. O.
Southampton Free Eye Hospital.—H.S. £150.
South London Hospital for Women, Clapham Common, S.W.—Asst. P. Anæsthetist. 10*s.* 6*d.* per attendance. Also Dental Surg. £25.
South Shields, Ingham Infirmary and South Shields and Westoe Dispensary.—Jun. H.S. £150.
Walsall General Hospital.—Jun. H.S. £150.
Warrington Infirmary and Dispensary.—Sen. and Jun. H.S.'s. £250 and £200 respectively.
Warrington, Hefferston Grange Sanatorium, Weaverham.—Tuberc. O. and R.M.O. £600.
West London Hospital, Hammersmith-road.—Hon, Med. Radiographer.
Westminster Hospital, Broad Sanctuary, S.W.—Cas. M.O. £100.

The Chief Inspector of Factories gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Weymouth (Dorset).

Births, Marriages, and Deaths.

BIRTHS.

BARON.—On March 26th, at Platt's-lane, Hampstead, the wife of Dr. A. E. Baron of a son.
MONTGOMERY.—On March 19th, at Brunswick House, Bromley, Kent, the wife of Raymond Montgomery, M.D., of a son.
STUART.—On March 19th, at Progressive Cottage, Cloughfold, Lancs, the wife of S. W. H. Stuart, M.B., Ch.B. (Edin.), of a son.

DEATHS.

BELILIOS.—On March 20th, at Wimbledon, David A. Belilios, M.R.C.S., D.P.H., Medical Officer of Health for Wimbledon, aged 47 years.
HODGES.—On March 20th, suddenly, at "Watton Cottage," Watton at Stone, Herts, Herbert Chamney Hodges, M.R.C.S. L.R.C.P. Lond., aged 62 years.
PERRY.—On March 25th, at St. Catherine's, Woking, Walter Dymock Perry, M.R.C.S., L.R.C.P., late Capt., R.A.M.C., aged 50 years.
WALLIS.—On March 24th, at South View, Farningham, Kent, Richard Stephen Wallis, M.R.C.S., in his 85th year.
WILLAN.—On March 23rd, at Melton Mowbray, George Thomas Willan, M.R.C.S., aged 81 years.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

THE EXTENT OF THE HOUSE FAMINE.—The Minister of Health recently stated in the House of Commons that he had come to the conclusion that the original estimate of the housing need of this country—the figure was placed at 500,000—was not based on sound calculations. He added, moreover, that there was a demand for houses at the end of the war which does not exist to-day. The question of the present demand for houses is dealt with in a memorandum published this month by the Garden Cities and Town-Planning Association (Garden Cities and Town Planning, p. 36) as an outcome of the conference held at Welwyn last October. This Association, while "not prepared to dogmatise on the precise number of houses required," estimates from the known overcrowding and necessity for slum clearance at the present time, with the normal needs of an increasing population, that there will be required in the next 15 years approximately 2,000,000 new small dwellings. The number required to replace worn-out houses and to meet the yearly increase of population in this period is not less than 1,200,000. The Association, much as many of its members dislike the idea of subsidised housing, is forced to the conclusion that some form of subsidy is still and will be necessary. But they would limit the granting of subsidies to those areas where the sites are chosen as part of a town plan with a view to ultimate requirements and not merely to meet immediate necessities.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, April 3rd.

TROPICAL DISEASES AND PARASITOLOGY: at 8.30 P.M.
Communications:
Colonel Wilkinson, I.M.S.: Notes on Two Cases Reported as Yellow Fever.
Dr. L. E. Napier: Report on the Treatment of Ten Cases of Kala-azar by Sodium Acetyl-para-aminophenylstibiate ("Stibenyl").
Prof. R. T. Leiper: (*a*) Sparganum in Man in Africa. (*b*) Note on Nomenclature of Certain Helminth Parasites of Man.
Dr. M. Khalil: The Earliest Account of Pellagra in Egypt.

Tuesday, April 4th.

ORTHOPÆDICS: at 5.30 P.M. (Cases at 5 P.M.)
Cases: The following will be shown by:—
Mr. Laming Evans (President): Congenital Dislocation of the Hips, Knees, and Elbows.
Mr. R. C. Elmslie: Congenital Displacement of the Patella after Operation.
Mr. Gordon Pugh: Congenital Dislocation of both Hips and Knees.
Mr. W. H. Ogilvie: Case for Diagnosis.
Mr. Paul Bernard Roth: (1) Periostitis of the Metatarsal Bone. (2) Abduction Fracture of Ankle with Dislocation of Astragalo-scaphoid Joint after Operation.

PATHOLOGY: at 8.30 P.M.
Annual General Meeting:
Election of Officers and Council for Session 1922–23. (Names already circulated.)
Communications:
Sir G. Lenthal Cheatle: Some Whole Sections of Obstructive Prostate Glands.
Dr. M. Cowan: Colony Variations of Streptococcus in Relation to Virulence.
Dr. A. Fleming and Dr. V. D. Allison: The Lytic Action of Body Fluids and Tissues on Bacteria.
Dr. R. A. O'Brien, Dr. A. J. Eagleton, Mr. A. T. Glenny, Dr. C. C. Okell, and Miss E. M. Baxter: Further Experiences with the Schick Test.

Wednesday, April 5th.

SURGERY: at 5.30 P.M.
Paper:
Mr. C. Max Page and Mr. G. Perkins: Some Points in the Technique of Bone Grafting.

ORTHOPÆDICS:
Members of this Section are specially invited to attend the above meeting of the Section of Surgery.

Thursday, April 6th.

OBSTETRICS AND GYNÆCOLOGY: at 8 P.M.
Short Communication:
Dr. Archibald Leitch: The Extension of Carcinoma of the Cervix and the Vagina (illustrated).
Papers:
Dr. W. Fletcher Shaw: Treatment of Uterine Fibroids.
Dr. C. L. V. de Wesselow and Mr. J. M. Wyatt: Chemical Observations on the Toxæmias of Pregnancy.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
TUESDAY, April 4th.—5 P.M., Second Lumleian Lecture: Dr. Hector Mackenzie: Diseases of the Thyroid Gland.
THURSDAY.—5 P.M., Third Lumleian Lecture.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
Daily:—10 A.M., Visit of Post-graduates to Wards. 2 P.M., In-patient, Out-patient Clinics and Operations.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, 29, Bolingbroke-grove, S.W. 11.
APRIL TO MAY: Vacation. Summer Session commences with a resumption of Lectures and Demonstrations.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART POST-GRADUATE COURSE, Westmoreland-street, Marylebone, W.
MONDAY, April 3rd.—5.30 P.M., Dr. Parsons-Smith: Tachycardia.
Daily:—10 A.M. and 2 P.M., Out-patients and In-patients.

BRITISH MEDICAL ASSOCIATION (CHESTERFIELD BRANCH) POST-GRADUATE COURSES.
FRIDAY, April 7th.—(At Chesterfield Royal Hospital Board Room) 2.30 P.M., Dr. Skinner: Blood Transfusion. 3.15 P.M., Mr. Garrick Wilson: Some Common Orthopædic Conditions.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, April 4th.—4.30 P.M., Dr. A. H. Holmes: Demonstration of Heart Cases.

Notes, Short Comments, and Answers to Correspondents.

THE ROUTINE WORK OF A TUBERCULOSIS DISPENSARY.[1]

BY W. H. DICKINSON, M.B., D.P.H., M.R.C.P. EDIN.,
TUBERCULOSIS MEDICAL OFFICER, CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

IN planning out the work of a tuberculosis dispensary due regard must be paid first to the convenience of the patients, secondly to the necessity for making the best use of the staff provided. Generally speaking, the dispensary is open from 9 A.M. till 5 P.M. on weekdays (Saturday 9 A.M. till 12 noon or 1 P.M.) and, in industrial districts, one or more evening sessions will be required. As a rule the length of a clinic should not exceed three hours, the number of sessions being determined by the number of patients in attendance. Each of the medical staff should be responsible for at least six clinics a week, which will absorb about half of his working hours; the balance will be distributed over various duties—e.g., taking daily reports of nurses on cases visited by them, microscopical examination of sputa, correspondence, and reports relating to the work generally, home visiting of patients, &c. Wherever possible, separate clinics should be arranged for the two sexes, and the Saturday morning reserved for school children attending school.

It adds greatly to the convenience of parents of children of school age, excluded from school on account of tuberculosis or suspected tuberculosis, if a special clinic be held for such cases; and it is a distinct advantage if this clinic be placed under the charge of one of the school medical officers who can easily arrange for any particular patient to be seen by the tuberculosis officer if desirable. In order to prevent congestion all patients, excepting those attending the special sessions for school children, should be seen by appointment, a *minimum* of 15 minutes being allowed for examination of the chest or larynx, and five minutes per case under observation or receiving medicinal treatment.

The majority of patients attending the dispensary will be referred thither by general practitioners, school medical officers, local hospitals and dispensaries, war pensions and insurance committees, but a considerable number will come as a result of the domiciliary visit of one of the nursing staff after notification. By arrangement with the local profession a notification may usually be regarded as an application on the patient's part to participate in the benefits of the local anti-tuberculosis measures, unless the contrary is definitely stated by the doctor, on the form, at the time of certification. Needless to say, if the practitioner in attendance on any case requests that the patient be not visited by the dispensary staff his desires should be strictly complied with, for it is essential to cultivate and maintain cordial relations with all the doctors practising in the district.

Register and Records.

When a new case arrives for examination the name is first entered in the dispensary register, which is preferably arranged in book form. In addition to the usual columns for address, age, status as to insurance, date of notification, if notified, &c., a space should be reserved for insertion of the classification, if the patient is found to be tuberculous, or for the provisional diagnosis, if no evidence of clinical tuberculosis is detected. This ought to be completed within two months of the date of entry and serves as a valuable check, in later months or years, on the diagnostic acumen of the medical staff.

Great difference of opinion exists as to the form in which the records of patients should be kept; this question has received considerable attention recently since the Ministry of Health has threatened, for the sake of securing uniformity, to impose upon all dispensaries a complicated and unwieldy procedure. The system here described has proved satisfactory to the writer and has stood the test of time.

There are two important items: (1) The case-sheet, which should be as brief as possible but nevertheless should contain all the important factors required for coming to a correct diagnosis: and (2) the environmental record which serves as the basis of "after-care" and prophylaxis. Sheets of foolscap size are used in each instance.

After the dispensary number and personal particulars (name, age, occupation, &c.) have been entered by one of the clerical staff the nurse takes the pulse and temperature, registers the height and weight, and then questions the patient regarding the duration of his illness, first symptom, present complaint, personal history as to previous illnesses and treatment received, and family history as to tuberculosis, the answers being noted in appropriate spaces. The standard weight, by which is meant the usual weight in adults, and the average for age and sex in children, is recorded for comparison with that at the time of examination.

The rest of the case-sheet is reserved for the medical findings arranged under various headings—e.g., general condition, respiratory, alimentary, hæmopoietic, circulatory, genito-urinary, locomotory, and "other" systems, with a space at the foot for "recommendation." The extreme right margin can be utilised for block diagrams of the chest, a space for classification or diagnosis, and a small table for the results of sputum examinations. The reverse side is ruled horizontally and is used for subsequent visits of the patient, with columns for date, weight, notes on progress, &c., and recommendations as to treatment. The dates of admission to, and discharge from, institutions are also here recorded, preferably in red ink.

To avoid tearing and to facilitate filing and ready reference stout manila folders, bearing identification and other particulars, are utilised as containers for the case-sheets and other relative documents—e.g., sanatorium and X ray reports—and these serve as a card-index of the persons in attendance at the dispensary. When tubercle bacilli have been found in the sputum the folder can be marked distinctively, and such cases filed separately.

If the home has not been visited prior to the first appearance at the dispensary, the environmental particulars can be taken on a separate form, at the same time as the history, to be subsequently checked and supplemented by the nurse in whose district the patient resides. Before examining the patient the physician scans the history and environmental particulars, amplifying such points as he deems necessary by direct interrogation. After recording his findings a provisional diagnosis is made and entered in the appropriate space and specimens of urine and sputum (if available) are requested.

If the case is obvious—e.g., suffering from acute or advanced disease—the tuberculosis officer can write to the doctor in charge forthwith, making a note of his action and keeping a carbon copy of the letter. Usually, however, it will be found more convenient to delay communicating with the medical attendant until the next visit, by which time the result of urine and sputum examinations will be known, and if a temperature record has been kept by the patient this will also be available. The interval to elapse before the next visit is jotted down on the case-sheet; prior to the patient leaving the dispensary, a definite appointment is made, the day, date, and hour being written up on his attendance card by one of the clerical staff, who makes a corresponding entry in the appointment book.

The Environmental Record.

After the first examination the "environmental" record is removed from the folder and handed to the visiting nurse for the district in which the patient is domiciled. This environmental record, for which a different coloured paper can advantageously be used, is supplemental to the case-sheet, but may be allowed to overlap the latter in some respects, for in many instances no other particulars will be available; the patient may be bed-fast when notified, or for some other reason unable to attend the dispensary. The form favoured by the writer makes provision on the front for identification particulars, date of notification, part affected, and name of doctor notifying, personal and family history with especial reference to tuberculosis, occupational particulars—e.g., precise nature of work, where employed, whether able to work (or attend school), and if not how long, previous occupation, and any exposure to unfavourable conditions at work. Then follow particulars as to home conditions—e.g., number of dwelling rooms, type of house occupied, number of inmates, with details as to age and sex, a brief note as to their general health, the sleeping arrangements of the patient, note of any precautions taken to deal with sputum, soiled handkerchiefs, &c., and the sanitary condition of the premises as to ventilation, light, dampness, &c. A space is left at the foot for "any further remarks" and if tubercle bacilli have been found in the sputum this is indicated in a prominent position—e.g., in the right-hand top corner.

The back of the sheet is used by the visiting nurse for reporting on subsequent visits to the patient, and is provided with columns for date, temperature (bed-ridden cases), and brief notes as to progress, change in sleeping arrangements, financial embarrassment, health of contacts, insanitary conditions arising in the home, &c. These forms are retained by the respective nurses so long as the patients to which they refer continue in attendance at the dispensary, but in case of death or removal from the district they are filed

[1] Part of a lecture on the Organisation and Conduct of Tuberculosis Dispensary Work, delivered on March 15th at the Royal Institute of Public Health.

with the other documents in the folder. Being arranged alphabetically they are always available for reference at a moment's notice. From these forms each district nurse prepares her own register in a stout note-book, with one or more entries for each street, the left-hand page being reserved for patients' names and the street number, and the right ruled into 12 columns for the months, each visit being recorded in the appropriate space.

The visiting nurse makes up her daily list from this street register and, on her return to the dispensary, enters up her notes on the patient's environmental record. The following morning between 9 and 10 A.M. she reports on her day's work to the tuberculosis officer, who goes over the cases one by one, asking for further information when desirable and making pencil notes of suggestions as to interval to elapse before the next visit, &c. If the tuberculosis officer is of opinion that no further visits are required or advisable the name is deleted from the street register, and the form returned to the folder beside the other papers. By this method every case residing in the area is followed up systematically and need never be lost sight of, except on the instructions of the tuberculosis officer, unless, of course, the patient removes and does not communicate his new address to the dispensary.

Should overcrowding, serious structural defect, or other insanitary condition be found to exist in a patient's home the facts are recorded in a special "complaints book" and the information transmitted to the medical officer of health the same day. If space is available, the question of the provision of a shelter can be considered. Not infrequently in the course of her rounds the visiting nurse comes across a family whose financial straits are such that the patient cannot secure the requisite nourishment or sufficient bed clothing, but who are unwilling to incur the stigma of accepting Poor-law relief; such cases can often be persuaded to enter hospital, or be referred to the tuberculosis care committee, with which the dispensary staff should be in the most intimate touch.

Examination of Contacts.

Another important duty of the visiting nurse is to arrange for the examination of contacts; it must, however, be admitted that owing to shortage of medical staff, this most valuable method of finding new cases of tuberculosis cannot in most areas be adequately carried out. There is no doubt, however, that it should be more widely practised. While excessive interference with the liberty of the subject is to be deprecated, this matter is so important that it seems quite permissible to insist, after a death from tuberculosis, if not after a notification, that the head of the household should furnish the medical officer of health with a certificate stating that all the contacts have been seen by a qualified medical man and undergone a proper examination and detailing the results thereof. Such certificates would, of course, be provided free at the dispensary, and in this way the majority of "contacts" in any area would come within the purview of the tuberculosis officer; treatment, where necessary, could thus be instituted at the earliest moment. A simple case sheet, such as the one outlined above, can be completed for each contact, and several can be filed together with the proviso that a separate folder be used for each definite or notified case. As a general rule no environmental particulars are required as they are already in the possession of the dispensary.

Laboratory Work.

While most of the laboratory work—e.g., determining the reaction and specific gravity of the urine, testing for albumin and sugar, and preparation of the slides from the specimens of sputum—can be relegated to the nursing staff, more detailed investigations and all microscopical work should be carried out by the medical staff only. There are great advantages in having the sputa examined at the dispensary, especially by the medical officer responsible for each case, for if the signs are definite a more thorough search is likely to be made, with a corresponding increase in the number of positive results. As there is usually no urgency in the matter it is convenient to modify the usual Ziehl-Neelsen procedure by leaving the slides in carbol-fuchsin overnight (at room temperature in warm weather, and in the incubator in winter) instead of using heat, as it is easier to secure clear preparations in this way. Should the results be required immediately the tray or tube containing the carbol-fuchsin and slides can be heated in a water-bath and this obviates the difficulty, so often experienced when the slides are not wholly immersed, of dried stain spoiling the specimens. While direct smears from the sputum are generally employed, concentration methods can be used in addition. Cases found to be bacilliferous are supplied with sputum flasks and disinfectant at the dispensary.

Work of the Clerical Staff.

The work of the clerical staff constitutes a very important part of the dispensary routine, as it includes the fixing of the appointments, the keeping of the various registers—e.g., dispensary patients, notifications, admissions to and discharges from institutions, deaths from tuberculosis, &c., together with the handling and safe keeping of all correspondence, the filing of all case records, and the preparation of daily, weekly, monthly, and yearly returns, &c. As notification is one of the most important items in any anti-tuberculosis programme it is essential that some system be used whereby it can be ascertained at a moment's notice whether any particular case has already been notified and also whether any cases have been reported previously from the same address. It is a great convenience if the original notifications be forwarded by the medical officer of health direct to the dispensary, where they can be filed after the particulars have been entered in a book register. It is advisable to provide, in this register, columns in which the date of the nurse's first visit to the case, and the date of his examination at the dispensary, can be entered later. In this way the proportion of all the notified cases, visited by the district nurses or attending the dispensary, is very easily ascertained, and it can be readily seen to what extent the dispensary is in touch with the local problem.

In addition to the book register, a double card index is kept, one series of cards bearing the surnames of patients and the other the names of streets. On the former the entry made consists of the patient's Christian name with the number of the page in the notification book, where all details can be found, while on the street cards the number of the house, together with the page in the notification book, are posted. Indexed in this way many thousands of notifications can be registered in small space, for relatively few duplicate cards will be required, and such a system will last indefinitely and any case can be traced in a moment many years after the original notification. When a case dies the date of death is entered in the book register, the word "dead" is placed after the Christian name in the "surname" series of cards, but no entry is made in the street index, which reveals at a glance the local hotbeds of tuberculosis.

Every Saturday morning the head clerk prepares for each nurse, on a special form, a list of the cases living in her district notified during the week. The names of dispensary patients who have failed to keep their appointments can with advantage be incorporated in this list, and also those of cases discharged from institutions. The date of the nurse's visit to each patient is filled in opposite the name and when the list is completed the form is returned to the clerk. Some such system is essential in order to keep in touch with all patients, who, in the opinion of the tuberculosis officer, should attend for observation or other purposes.

The head clerk is also responsible for extracting from the weekly death returns the names, ages, and addresses of all the patients certified to have died from any form of tuberculosis, entering these in a special death register and making the necessary "cross" entries in the other registers. In the case of a dispensary patient the date of death is marked on the front of the folder, the environmental record is added, and the entire dossier filed away with the other deaths of the current year, the details being tabulated later. Disinfection of premises, bedding, &c., is arranged for in the same way as after admissions to institutions and changes of address.

Preparation of Returns.

The last item for consideration is the preparation of periodical returns, which is greatly facilitated by so arranging the records and registers that the information required can easily be abstracted. It has already been stated that the sputum positive cases are filed separately from the negative cases; for administrative purposes it is also convenient to subdivide the cases by sexes into adults and children, the age limit for a child being taken as 15 years, because after the sixteenth birthday all individuals are eligible for health insurance. A daily record should be kept of the number of patients in each category attending the dispensary, the number examined, the number of visits paid by the nurses, the number of patients receiving treatment in various institutions, &c. By arranging the figures in parallel columns and allowing for at least 31 entries, the essentials of each month's work can be simply recorded on a single sheet and the year's work in 12, so that it is possible at a glance to take stock of the work done at the dispensary in any particular day or longer period of time.

Conclusion.

In a general way practically all the ground has now been covered and the various methods of studying the local tuberculosis problem, both individually and collectively, described. It must be remarked, however, that the dispensary system, as outlined by the Departmental Committee, has never been fully developed owing to lack of funds; not only is there a shortage of staff, but relatively few dispensaries are provided with an X rays outfit, which is so valuable as an aid to diagnosis, and indispensable where artificial

pneumothorax therapy is practised. More liberal appropriations must be made for after-care work, and more attention paid to educational propaganda, to foster the spread of hygienic knowledge and emphasise the importance of the examination of contacts.

Before this article is concluded, reference may be made to the Framingham demonstration in the United States, where intensive anti-tuberculosis work has recently been instituted. Such enthusiasm has been displayed locally that 75 per cent. of the total population of 16,000 have undergone a thorough physical examination; the results showed that 1 per cent. were suffering from active tuberculosis. Comprehensive measures for prevention and treatment in institutions and at home are in operation, and it is claimed that within the space of four years the mortality from tuberculosis has been reduced by half. Such a record of achievement cannot fail to inspire every worker in the tuberculosis field with hope for the future.

THE NATIONAL INSTITUTE OF INDUSTRIAL PSYCHOLOGY: A YEAR'S WORK.

THE application of physiological and psychological research to war-time industry had remarkable results in increased output and improved health of the worker, and far-seeing employers have since adopted similar procedures in order to increase all-round efficiency. In 1918 Mr. H. J. Welch, one of the directors of Messrs. Harrisons and Crossfield approached Dr. C. S. Myers, director of the Cambridge Psychological Laboratory, with a view to initiating some scheme for utilising the results of scientific research for vocational selection and guidance and for the improvement of human conditions generally in commercial and industrial life. As a result, the National Institute of Industrial Psychology was founded and incorporated in February of last year. This Institute held its first anniversary meeting in the Egyptian Hall of the London Mansion House on March 27th, when a large and influential audience listened to addresses by Lord Haldane, and Dr. Myers, director of the Institute, who is resigning his lectureship of applied psychology at Cambridge in order to devote the whole of his time to the Institute. This, it may be stated, applies its whole income in extending its activities, no dividends being paid to members.

Mr. Welch, chairman of the Institute, who presided, said that they had been flattered by a society starting on similar lines in New York upon the council of which were many of the leading scientists in America and the president of Yale University. The object of the National Institute of Industrial Psychology was to assist employers to find the best way to do any particular piece of work, and to find the best man to do it, while an appeal was made to all classes; for the employer would benefit by an increased output and the worker would gain higher wages and more leisure. The work would also help to strike directly at some of the root causes of illness, poverty, unhappiness, and crime, and therefore should receive the support of the socialist and the philanthropist.

Dr. Myers said that the work already done had earned the gratitude of both employers and employed. Tests had been devised for all classes of workers and the application of these tests facilitated the selection of candidates. The methods had been extensively employed in the United States, and instruction and research in industrial psychology were carried on in most of the American universities. In Germany there were many laboratories concerned in industrial psychology at such places as Berlin, Frankfurt, Munich, and Leipzig, and he instanced the fact that as a result of this kind of research the big Berlin Tramway Company had saved during one year no less than 12 million marks. Germany, he said, hoped to secure the lead in commerce and industry by paying attention to the human aspect of the workers, just as in previous days she advanced by paying attention to the material aspect. Alluding to the combination of theoretical and practical work done by the Institute—for it offered the services of its experts to any individual firm—Dr. Myers said that vocational psychology was like medicine and surgery which advanced by research and by practice.

Mr. W. L. Hichens, chairman of Cammell, Laird, and Co., entered a strong plea for the support of the Institute, remarking that it was doing a work of real national importance.

Lord Haldane expressed the opinion that unrest prevalent in this and other countries, which arose out of the relations between capital and labour, could be enormously reduced if the methods and principles advocated by the Institute were put into practice. Many of our troubles, said Lord Haldane, were due to want of knowledge and not to lack of desire to do right. He instanced how the scandal of the concentration camps in the South African War was ended as soon as the physiologist had shown that the food of the women and children, though generous, was physiologically unsuitable, and how, while he was at the War Office, the physiologists had shown the unsuitability of the food on which soldiers were then forced to march. It was neither capital nor labour that created work, he continued, but mind, and therefore the more that mind was developed the more progress would be made. The worker was keenly interested in getting more leisure for educational improvement, and the work of the Institute would in a great measure relieve labour from the feeling that men and women were only machines; making the worker comfortable would cause him to give his output willingly. Lord Haldane believed that we were on the eve of recognising generally that the human being was not a machine but a living organism, and he hazarded the opinion that within 20 years a psychological expert would be at the elbow of every manager of every great concern to aid him in increasing the efficiency of his business, promoting at the same time the happiness, health, and comfort of the worker. The following resolution was passed unanimously:—

"In view of the present serious economic situation and of the necessity to reduce costs of production and to increase the total national output, this meeting is of the opinion that (*a*) a more complete and scientific development of the nation's human resources and a reduction of wasteful and misapplied energy are matters of urgent national importance; (*b*) the methods adopted by the National Institute of Industrial Psychology have been shown to reduce costs of production, to promote the development of individual ability, to eliminate unnecessary effort and fatigue, and to improve the health and well-being of the worker; (*c*) it is imperative that a National Fund should be immediately established to enable the Institute to extend its sphere of usefulness and to continue the necessary researches into the scientific problems involved."

It may be noted that the Trustees of the Carnegie United Kingdom Trust have made a grant of £1000 annually for five years, and it is the intention of the Institute to endow lectureships and research posts in the principal universities of the Kingdom which will serve as local centres for the development of its work.

DENTAL EXTRACTION DURING PREGNANCY.

SPEAKING on the question of the teeth of mothers and young children at the St. Pancras School for Mothers on March 17th, Mr. George Thomson, L.D.S., dental surgeon to the Royal Northern Hospital, said that in his experience the majority of young mothers had from four to six teeth requiring attention, and if only they would get those teeth dealt with, either by having them filled or extracted, they would ensure their mouths being in a healthy condition. The idea was prevalent that expectant mothers should not be given gas when having teeth removed, but no ill-effects need be anticipated from this practice. It was far better to have the teeth attended to than to leave them in the mouth in a decayed state during pregnancy or at any other time. Provision was now being made in all the London boroughs for mothers to have their teeth attended to if they wished.

PHYSIOLOGY OF HELIO-ALPINE TREATMENT.

AT the last of a series of lectures on tuberculosis and public health given at the Royal Institute of Public Health on March 22nd, Mr. A. J. Morland dealt with the helio-alpine treatment of surgical tuberculosis, drawing on his experience as assistant to Dr. A. Rollier at Leysin. Some of the more interesting points in the physiology of treatment with radiant energy may be summarised as follows:—

From the point of view of therapeutics the division of radiant energy into heat, light, and actinic rays is scarcely justified, for the rays which stimulate the human retina are really but a small part of a series extending without a break from $\lambda = 300\,\mu$ at the infra-red end to $\lambda = 0{\cdot}01\,\mu$ at the X ray end. The solar spectrum itself only contains rays between $\lambda = 20$ and $\lambda = 0{\cdot}3$. Infra-red rays have low penetrating power and cause burns of the skin if they are intense. The penetrating power of visible rays is relatively high. They are absorbed to a large extent in the vascular layer of the skin, immediately beneath the epidermis, where the temperature may rise to 115° F. without burning the surface. The penetrating power is highest in the red region beyond the spectrum. Light acts only upon substances which absorb it, while chemical activity appears to be dependent on phenomena of resonance. For each class of rays substances exist in which exposure to the rays results in definite chemical change. Absorption of large quantities of radiant energy by so complex a colloidal system as the blood opens up vast possibilities for photo-chemical reactions. At the extreme short-wave end of the spectrum, known as hard X rays, penetration is again a feature of the waves.

Exposure of the feet to sunshine for a few minutes may cause a reaction similar in character to a tuberculin reaction in distant tuberculous lesions; as might be expected, these reactions are more pronounced in highly vascular structures such as lung or peritoneum. Leuba has recorded a case of mild diabetes mellitus in a male, aged 45 years, who

regularly passed 20 g. of sugar per litre on ordinary sanatorium diet, but in whom sun-baths caused a complete disappearance of the sugar; 24 hours without sunning resulted in a return of the glycosuria, which was controlled in this way for a period of four weeks.

Ultra-violet rays have low penetrating power, especially when the skin is pigmented, but they cause pigmentation. Pigmentation has a singular effect on exanthemata. An eruption of varicella only appeared under a plaster where the skin was protected from the sun's rays. In a case of scarlet fever in a sun-burned patient all the symptoms except the rash were present, including peeling and transitory albuminuria. During the Swiss mobilisation of 1914 a battalion of 1000 men was revaccinated, of whom 160 were deeply pigmented to the waist owing to working in the fields stripped. In each of these 160 the vaccination did not take, but when repeated sub- instead of intra-cutaneously a normal proportion gave positive results. In tuberculosis there is a distinct correlation between pigmentation and prognosis.

L. E. Hill's work shows the importance of cold air in therapeutics, owing to its action in speeding up metabolism. The relative importance of cool air and sunlight is probably indeterminable until the action of sunlight is more fully understood. Treatment with highly luminous rays of the carbon arc has given excellent results with surgical tubercle, as shown by its analgesic effect, a high return of articular function, and lack of muscular wasting. Rollier finds the analgesic effect depends more on sunshine than on air exposure. He has long insisted on the importance of combining cold air with sunlight. In summer insolation is practised from 6 to 9 A.M., and in winter from 9 A.M. to 12 noon when the average air temperature is still below freezing-point. In this country exposure to air below freezing-point does not appear practicable except over periods of minutes.

EXEUNT INSPECTORS OF NUISANCES.

TO-DAY the Public Health (Officers) Act of 1921 comes into force and "inspectors of nuisances" all over the country become "sanitary inspectors," a change of name already effected in London. Nuisances there certainly are which need inspecting and removing, but it is very important for the public health service in all its branches to take a wide view of its preventive duties, and the new name will help to ensure this. A large proportion of the women on the staff bear the pleasant name of "health visitor" and this may in the future be the final evolution of the inspector of nuisances.

HOSPITAL CARE OF SUICIDAL CASES.

AN important pronouncement has been made by the Home Secretary regarding the question of refusal by infirmary authorities to admit cases of attempted suicide because of the cost of having a policeman to watch the patient. The Ashton Infirmary governors by letter referred the question to the Home Secretary, who replied that if a person had attempted suicide and appeared likely to renew the offence the police would not be justified in taking no steps to prevent him, whether he had been charged with the offence or not. If the hospital authorities have reasonable ground for fearing a renewal of the offence and the police are requested to attend, an officer should be sent. If the employment of a watcher would be equally effective, and more economical, there is no objection to such a watcher being paid from the police fund. A governor of the hospital stated that in one case the hospital authorities employed a policeman and it cost them £18.

HABIT AND ADAPTATION.

IN the course of a lecture on Adaptation and Habit, delivered before the People's League of Health at the Royal Society of Arts on March 20th, Dr. E. D. Macnamara discussed the origin of habits, how they were built up and associated. Habits developed in various ways. The commonest habit was that of going to bed, which had developed quite unconsciously—there was no effort about it, and it went on throughout life. Other habits were perhaps built up consciously, but without the will—washing, and eating at table, for instance. Both these were often done against the will of infants. Then again, repressions in which an emotion had been put into the background might occur, and that emotion in subsequent life might reappear as a morbid phenomenon. It was in the early stages of the formation of habit that repressions were the commonest—when consciousness, in the adult sense of the word, did not exist, or had not been organised. Other ways in which habits might be formed were by passive resignation to customs, and the formation of habit with emotion was instanced in religious conversion. In this latter case the powerful emotion might be applied suddenly and completely block out old habits by introducing a new set of forces.

Perhaps the highest form of habit adaptation was that formed on reasoned conviction, but by whatever means a habit was formed, whether emotionally, by passive resignation, or habitual use, singleness of purpose, whether good or bad, was of great importance. The greatest and most successful villains were those who were not perturbed by pity or goodwill for others, or by the fear of punishment, either Divine or human. Their purpose was a simple direct one, uninfluenced by other considerations. Conversely, the same singleness of aim in the opposite sense produced the hero and the saint.

The earlier in life a habit was started, and the longer it was practised, the more automatic it became. This automatism, provided it worked for good, was a great advantage, for it conduced to quickness of action, and left time for dealing with those forces which were not automatic. Bad habits could be got rid of by replacement with good habits, by a change in environment, by submission to the direction of other persons, by emotional stress, or, best of all, by reasoned conviction.

GERMAN X RAY APPARATUS.

To the Editor of THE LANCET.

SIR,—In your issue of March 11th (p. 504) Dr. A. Geoffrey Shera advances convincing reasons why British hospitals should go to Germany for their X ray apparatus. British apparatus may be (and is) both better and cheaper than German, but Austrian microscopes and chemical balances from an unnamed foreign country are both cheaper than the corresponding British article, and that seems to end the matter. What I do not understand is why Dr. Shera does not clinch his argument by quoting French clocks and American motor-cars—they would be quite as much to the point.

The information that British manufacturers are making big profits will be welcome to many of us. The suggestion that we should devote some of our surplus gains to financing hospitals in the hope that they will then be able to afford to buy our apparatus is a valuable one, and the contrast drawn between the unselfish British workman, who is at last "bestirring himself," and his greedy and apathetic employer gives the latter a hint for which he should be duly grateful.

Will it surprise Dr. Shera to learn that more than one X ray specialist has admitted that he *dare* not use British apparatus, superior though it may be, because his patients demand German technique and pointedly ask him whether he is using *genuine* German appliances?

I am, Sir, yours faithfully,

BRITISH MANUFACTURER No. 3.

London, March 24th, 1922.

Panel Doctor.—Sir Alfred Mond's reply to a question in the House of Commons regarding the proposed Bill, under which the cost of medical benefit will be partly met out of the accumulated funds of approved societies, was quite categorical. The Bill, he said, *will not* entail any changes in the control of medical benefit. And so long as the insurance committees are kept in being they will act in some respects as a safeguard. Nevertheless, it is incumbent on the Insurance Acts Committee closely to scrutinise the provisions of the Bill as soon as it has been drafted, for disquieting suggestions have been publicly made as to the formation of the medical list and the limitation of free choice of doctor. Insurance practitioners should be alert and ready in case action should become necessary.

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